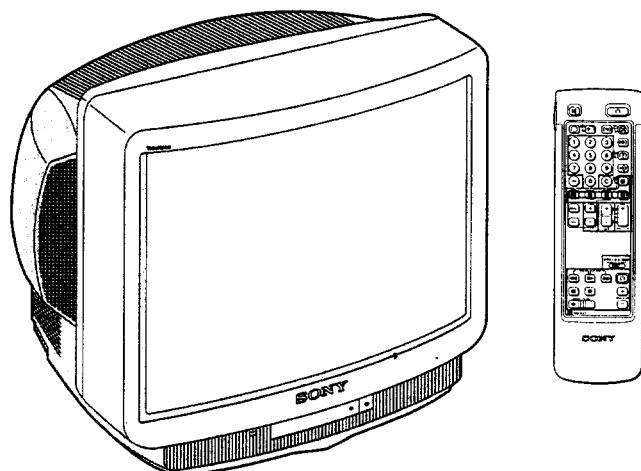


SERVICE MANUAL

BE-3B CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-X2501D	RM-833	AEP	SCC-G77A-A	KV-X2503E	RM-833	Spanish	SCC-G82A-A
KV-X2501A	RM-833	Italian	SCC-G81A-A	KV-X2502L	RM-833	IRISH	SCC-G83A-A
KV-X2500B	RM-833	French	SCC-G85A-A	KV-X2502U	RM-833	UK	SCC-G87A-A
KV-X2501B	RM-833	French	SCC-G84A-A	KV-X2501K	RM-833	OIRT	SCC-G86B-A



TRINITRON® COLOR TV
SONY®

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
AEP	B/G/H, D/K	GERMAN Stereo	PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
Italian	B/G/H, D/K	GERMAN Stereo	ITALIA VHF:A-H2 (C) UHF:21-69 PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
French	B/G/H, D/K L, I	GERMAN Stereo	L VHF:F02-F10 UHF:F21-F60 CABLE:B-Q B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 I UHF:B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
Spanish	B/G/H, D/K	GERMAN/NICAM Stereo	PAL B/G VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
Irish	I	NICAM Stereo	VHF A-C, D-J, VHF 21-69 CABLE CHANNELS S1-S20 HYPERBAND S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
UK	I	NICAM Stereo	UHF : B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
OIRT	B/G/H, D/K	GERMAN Stereo	B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

MODEL	AEP	Italian	French Text	French Non Text	Spanish	Irish	UK	OIRT
Power Consumption	99W	99W	99Wh	99W	99W	137W	137W	99W

SPECIFICATIONS

Picture Tube Hi-Black Trinitron
Approx. 63 cm (25 inches)
(Approx. 60 cm picture measured
diagonally)
110° -deflection

[FRONT]
⊖3 Video input - phono jack
⊖3 Audio inputs - phono jacks
⊖3S video input 4-pin DIN
Ω Headphone jacks : stereo minijack

Input/Output Terminals

[REAR]

- ⊖1 21-pin Euro connector (CENELEC standard)
- inputs for audio and video signals
- inputs for RGB
- outputs of TV video and audio signals
⊖2/⊖3 2 21-pin Euro connector
- inputs for audio and video signals
- inputs for S video
- outputs for audio and video signals (selectable)

Sound output 2 x 20W (Music power)
Power requirements 220 - 240V
Dimensions Approx. 575x500x487 mm
Weight Approx. 33kg
Supplied accessories RM-833 Remote Commander (1)
IEC designation R6 battery (1)
Other features NICAM, FASTEXT, TOPTEXT.

[RM-833]

Remote control system infrared control
Power requirements 1.5V dc
1 battery IEC designation
R6 (size AA)
Dimensions Approx. 65x225x21 mm (w/h/d)
Weight Approx. 157g (Not including batteries)

Design and specifications are subject to change without notice

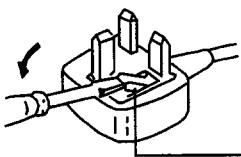
Model name Item	KV-X2501D	KV-X2501A	KV-X2500B	KV-X2501B	KV-X2503E	KV-X2502L	KV-X2502U	KV-X2501K
Pal Comb	OFF							
PIP	OFF							
RGB Priority	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
Woofer Box	OFF							
Scart 1	ON							
Scart 2	ON							
Front in (3)	ON							
Scart 4	OFF							
Projector	OFF							
AKB in 16:9 mode	ON							
Norm B/G	ON	ON	ON	ON	ON	OFF	ON	ON
Norm I	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
Norm D/K	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
Norm AUS	OFF							
Norm L	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF							
Norm M	OFF							
Teletext	ON	ON	OFF	ON	ON	ON	ON	ON
Nicam Stereo	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
Language Preset	Deutch	Italian	French	French	Spanish	English	English	OIRT

WARNING (KV-X2502L / KV-X2502U only)

The flexible mains lead is supplied connected to a B.S. 1363 fused plug having a fuse of 5 AMP capacity. Should the fuse need to be replaced, use a 5 AMP FUSE approved by ASTA to BS 1362, ie one that carries the  mark.

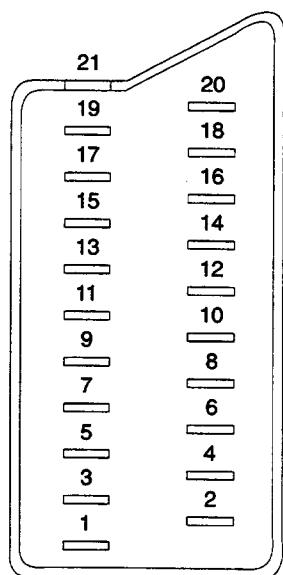
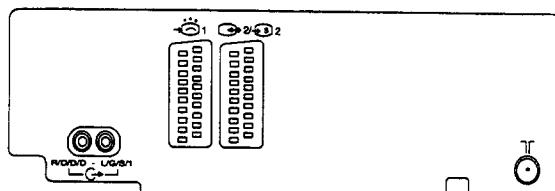
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a 5 AMP FUSE, otherwise the circuit should be protected by a 5 AMP FUSE at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade
and replace the fuse.

21 pin connector (G-1 G-2 / G-4)



Pin No.	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
2	○	○	○	Audio input B (right)	Standard level : 0.5V rms Output impedance : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedance : More than 10kohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More than 10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 ± 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	—	—	Red input	0.7 ± 3dB, 75 ohms, positive
	—	○	○	(S signal) chroma input	0.3 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync: 0.3V(-3+10dB)
20	○	—	—	Video input	1V ± 3dB, 75ohms, positive sync: 0.3V(-3+10dB)
	—	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync: 0.3V(-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm, positive Sync. 0.3V -3+10 dB
4	C (S signal) input	0.3V ± 3dB 75 ohm, positive Sync.

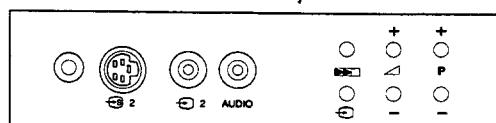


TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>																																																														
1. GENERAL																																																																			
Getting Started	6	5-1.	Block Diagram	29																																																															
Advanced TV Operations	8	5-2.	Circuit Board Location	34																																																															
Adjusting the Picture and Sound	8	5-3.	Schematic Diagrams and Printed Wiring Boards	34																																																															
Advanced Presetting Functions	10		* H1 Board	35																																																															
Teletext Operation	11		* H2 Board	35																																																															
Connecting Other Equipment	12		* H3 Board	35																																																															
For Your Information	13		* F1 Board	36																																																															
2. DISASSEMBLY																																																																			
2-1. Rear Cover Removal	16		* D Board	39																																																															
2-2. Chassis Assy Removal	16		* A Board	44																																																															
2-3. Service Position	17		* C Board	53																																																															
2-4. A Board Removal	17	5-4.	Semiconductors	55																																																															
2-5. Extension Board	17	6. EXPLODED VIEWS																																																																	
2-6. Picture Tube Removal	18	6-1. Chassis						6-2. Picture Tube						3. SET-UP ADJUSTMENTS						3-1. Beam Landing	19	7. ELECTRICAL PARTS LIST				3-2. Convergence	20	59				3-3. Focus	22					3-4. White Balance	22					4. CIRCUIT ADJUSTMENTS						4-1. Electrical Adjustments	23					4-2. Test Mode 2	24					4-3. BE3 Self Diagnostic Software	27				
6-1. Chassis																																																																			
6-2. Picture Tube																																																																			
3. SET-UP ADJUSTMENTS																																																																			
3-1. Beam Landing	19	7. ELECTRICAL PARTS LIST																																																																	
3-2. Convergence	20	59																																																																	
3-3. Focus	22																																																																		
3-4. White Balance	22																																																																		
4. CIRCUIT ADJUSTMENTS																																																																			
4-1. Electrical Adjustments	23																																																																		
4-2. Test Mode 2	24																																																																		
4-3. BE3 Self Diagnostic Software	27																																																																		

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATING TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD, DUE TO A LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLIMENTS PUBLIÈS PAR SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINT SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHASSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISE LORS DE TOUT DEPANNAGE. LE CHASSIS DE CE RECEPTEUR EST DIRECTEMENT RACCORDE A L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE !!

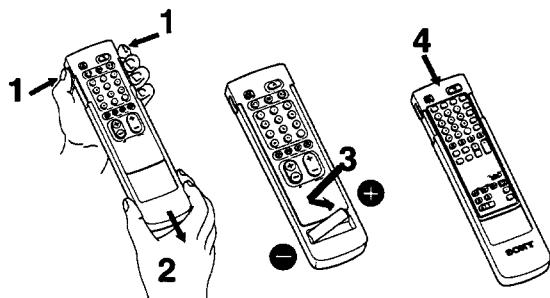
LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

Getting Started

Inserting the Battery Into the Remote Commander



Remove the cover.

Check the correct polarity.

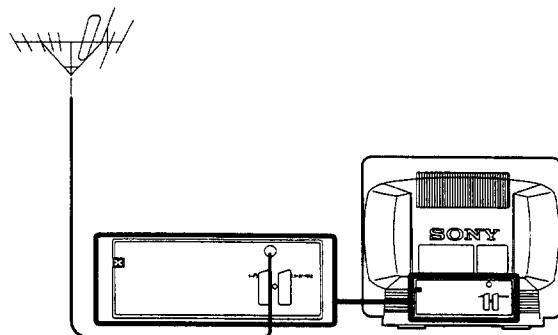
Refit the outside cover making sure that the Full Function side is visible.

About Battery Life

Under normal operation, a battery will last up to half a year.

Connecting the Aerial

Connect aerial to the **T** socket at the rear of the TV.
(cable not supplied)



Choosing a Language

(See inside of front cover and back cover)

1 Depress **① [A]** on the TV.

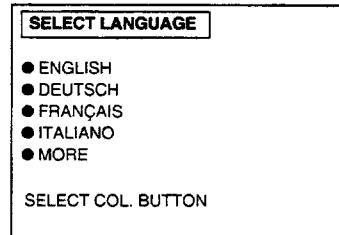
The TV turns on. If the standby indicator **[B]** on the TV is lit, press **② [3]** or any number button **[4]** on the Remote Commander.

2 Press **MENU [7]** on the Remote Commander.

The SELECT LANGUAGE screen appears.



- 3** Press one of the colour buttons **[7]** on the Remote Commander to select a language (Press the white button **[7]** to display other language alternatives). The SELECT LANGUAGE screen clears and all subsequent menus appear in the chosen language.



Note: From the second time when you turn on the TV, the MENU screen appears instead of the SELECT LANGUAGE screen. Press the yellow button **[7]** then press the white button **[7]** to redisplay the SELECT LANGUAGE screen.

Tuning in to Channels

You can tune in up to 60 channels to programme positions either automatically or manually.

auto tuning: A single button press allows all receivable channels to be tuned. Use if you are unfamiliar with the channel numbers of stations.

manual tuning: Use if you are familiar with the channel numbers of stations.

Choose the more appropriate way for you.

Tuning in to Channels Automatically

There are two possibilities for auto tuning:

A. On the TV: hold down **[>>] [E]** on the front of the TV for 2 seconds

or

B. On the Remote Commander: as follows

1 Press **MENU [7]**.

2 Press the white button **[7]**.

3 Hold down the red button **[7]** for 2 seconds,

Note: Press the green button **[7]** to cancel.

Tuning in to Channels Manually

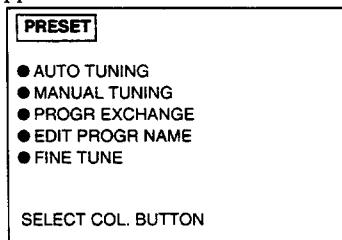
1 Press MENU **7**.

The MENU screen appears.



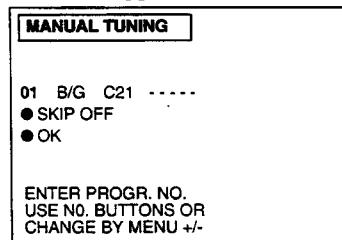
2 Press the white button **17** to select PRESET.

The PRESET screen appears.



3 Press the green button **17** to select MANUAL TUNING.

The MANUAL TUNING screen appears.



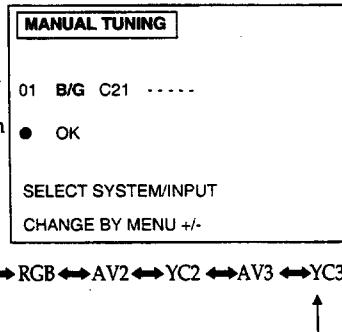
4 Press the number buttons **4** or MENU+/- **9** to select a programme position.

If you use the number buttons **4**, enter a double-digit number. (e.g. for programme number 4, first press 0, then 4)

5 Press the green button **17**.

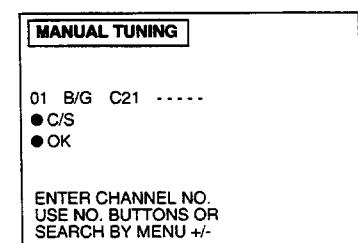
Note: Use MENU +/- **9** to select TV system. You can alternatively select input sources which may be assigned to programme positions. The display changes as follows:

B/G \leftrightarrow D/K \leftrightarrow AV1 \leftrightarrow RGB \leftrightarrow AV2 \leftrightarrow YC2 \leftrightarrow AV3 \leftrightarrow YC3



6 Press the green button **17**.

Note: If a video input source is selected in step 5, this is now stored. Refer to step 4 to tune other programme positions.



7 When you have selected B/G, press the red button **17** to select C (regular channel) or S (cable channel).

8 Press the number buttons **4** or MENU+/- **9** to select the channel number.

If you use the number buttons **4**, enter a double-digit number. (e.g. for channel 23, first press 2, then 3)

9 Press the green button **17** to store.

Note: If you want to preset other channels, repeat steps 4 to 9.

10 Press MENU **7** twice to return to the normal screen.

Note: You can skip unused programme positions when selecting programmes with the PROGR +/- buttons **18**. Press the red button **17** to skip in step 4. However, the skipped programmes may still be called up when you use the number buttons.

Basic TV Operations

Turning the TV on and off

Turning on

Depress **1** **A** on the TV.

Turning off temporarily

Press **1** **10** on the Remote Commander.

The TV enters standby mode and the standby indicator **B** on the front of the TV lights up.

Turning on again

Press **1** **3**, PROGR+/- **18**, or one of the number buttons **4** on the Remote Commander.

Turning off completely

Depress **1** **A** on the TV.

Note: It is recommended to use **1** **A** to turn off the TV. This could help you save energy.

Selecting TV Programmes

Press PROGR+/- **18** or press number buttons **4**.

To select a double-digit number

Press **1** **5**, then the number buttons **4**.

Adjusting the Volume

Press **1** **19**.

Muting the Sound

Press **1** **1**.

To resume normal sound, press **1** **1** again.

Displaying the On-screen Indications

Press **1** **14** once to display the on-screen indications.

Press again to make the indications disappear.

Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can adjust or select the functions as follows:

- Press **1** **1** **D** to adjust the volume.
- Press **1** **1** **C** to select programme numbers or to turn the TV on from the standby mode.
- Press **1** **1** **F** to select the input source.
- Press **1** **1** **E** to preset channels automatically.

Advanced TV Operations

Operating the Menu System

You can adjust picture and sound, preset channels to programme positions and utilise other convenient features by using the following menu system.

Press;	to;
1 MENU [7]	enter the MENU screen
2 a colour button [7]	select an item you want to change (The selected item is marked by a triangle.)
3 MENU+/- [9]	change (or adjust) the contents of the item
4 MENU [7]	return to the MENU screen
5 MENU [7] again	return to the normal screen

Press MENU [7] once or twice whenever you want to return to the normal screen.

Note: When selecting menus, the picture becomes darker. If, however, an item in the PICTURE ADJUSTMENT menu is selected, normal level of TV picture is restored to allow the best adjustment.

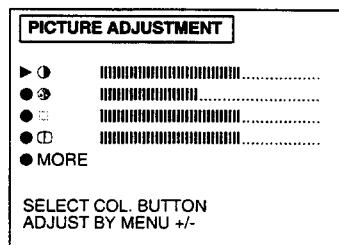
Adjusting the Picture and Sound

Although picture and sound are adjusted at the factory you can adjust them to suit your own taste.

- 1 Press MENU [7].
The MENU screen appears. 
- 2 Press the red button [7] to select PICTURE or the green button [7] to select SOUND.
- 3 Press the respective colour button [7] to select an item.
- 4 Press MENU +/- [9] to adjust.
- 5 Press MENU [7] twice or wait until the menu disappears automatically to return to the normal screen.

PICTURE ADJUSTMENT

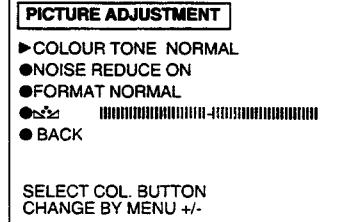
(First Page)



Press colour button	Effect
Red: For Picture [●]	Less —— More
Green: For Colour [●]	Less —— More
Yellow: For Brightness [●]	Darker —— Brighter
Blue: For Sharpness [●]	Softer —— Sharper
White:	Next page of PICTURE ADJUSTMENT

PICTURE ADJUSTMENT

(Second Page)

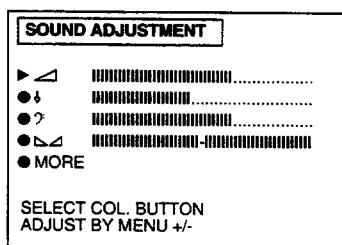


Press colour button	Effect
Red: For Colour Tone	Normal -> Warm (reddish colour tone) -> Cool (blueish colour tone)
Green: For Noise Reduce	ON: Reduces picture noise (in case of low signal level) OFF: Normal setting
Yellow: For Format	Normal: Normal setting 16:9 Wide screen effect
Blue: For Hue control [●] (only for NTSC video signals)	Reddish —— Greenish
White:	Back to first page of PICTURE ADJUSTMENT

Note: Press $\Rightarrow \Leftarrow$ [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

SOUND ADJUSTMENT

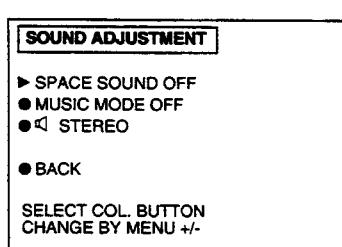
(First Page)



Press colour button	Effect
Red: For Volume ▶◀	Less —+— More
Green: For Treble ↓	Less —+— More
Yellow: For Bass ↑	Less —+— More
Blue: For Balance ▷◀	More left - more right
White:	Next page of SOUND ADJUSTMENT

SOUND ADJUSTMENT

(Second Page)



Press colour button	Effect
Red: For Space Sound	OFF: normal sound ON: for a special acoustic sound effect
Green: For Music Mode	OFF: normal sounds ON: when listening to music broadcast
Yellow: For Stereo:	Stereo -> Mono A (left channel) -> Mono B (right channel) -> Mono
White:	Back to first page of SOUND ADJUSTMENT

Note: Press **→←** [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

Using Special Features

With your TV you can utilise special features such as Parental Lock or Sleep Timer.

1 Press MENU [7].
The MENU screen appears.



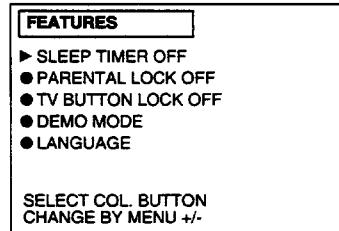
2 Press the yellow button [17] to select FEATURES.

3 Press the respective colour button [17] to select an item.

4 Press MENU +/- [9] to change.

5 Press MENU [7] twice or wait until the menu disappears automatically to return to the normal screen.

FEATURES



Press colour button	Effect
Red: For Sleep Timer (Automatic switch off function)	OFF -> 0:30 -> 1:00 -> 1:30 -> 2:00 (hours) After the selected time the TV set switches itself automatically into standby mode.
Green: For Parental Lock (For preventing children from watching programmes which you consider unsuitable)	OFF: Normal setting ON: The TV-channel you are watching is now blocked. In this way you can prevent undesirable broadcasts from appearing on the screen.
Yellow For TV Button Lock	OFF: Normal setting ON: The buttons on the TV do not function anymore. (The Remote Commander still operates)
Blue: For Demo Mode	ON: A sequence of menu pictures is displayed. Press any button on the Remote Commander to stop the function.
White: For Language	The SELECT LANGUAGE screen appears.

Advanced Presetting Functions

Exchanging Programme Positions

You can exchange the programme positions to a preferred order (example: exchange programme 09 (channel C21) with programme 15 (channel C24)).

1 Press MENU **7**.

The MENU screen appears.

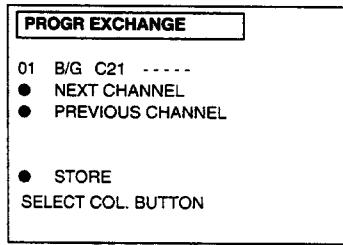


2 Press the white button **17**.

The PRESET screen appears.

3 Press the yellow button **17**.

The PROGR EXCHANGE screen appears.



4 Press the white button **17** repeatedly until the desired programme number (09) appears.

5 Press the red or the green button **17** repeatedly until the desired channel number (C24) appears.

6 Press the white button **17** to store.

Now the exchange has been completed. Channel C24 is tuned in to programme 09 and channel C21 is tuned in to programme 15.

7 Press MENU **7** twice to return to the normal screen.

Editing Programme Names

You can edit the programme names up to five letters.

1 Press MENU **7**.

The MENU screen appears.

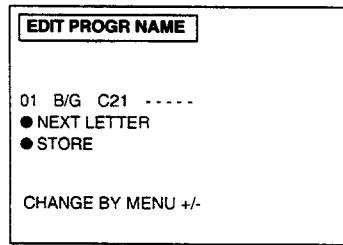


2 Press the white button **17**.

The PRESET screen appears.

3 Press the blue button **17**.

The EDIT PROGR NAME screen appears.
The first character flashes.



4 Press MENU+/- **9** to edit the first letter.

The first letter changes as follows;

A ↔ B ↔ ... ↔ Z ↔ 0 ↔ 1 ↔ ... ↔ 9 ↔ “-” (space)

5 Press the red button **17** to move to the next letter.

6 Repeat steps 4 to 5, until the fifth letter is chosen.

7 Press the green button **17**.

The programme name is stored, and the normal screen appears. To edit another programme name, repeat steps 1 to 7.

Fine Tuning

You can adjust the receiving condition by the FINE TUNE function.

1 Press MENU **7**.

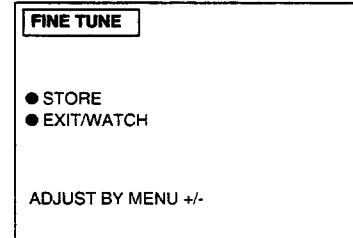
The MENU screen appears.

2 Press the white button **17**.

The PRESET screen appears.

3 Press the white button **17** again.

The FINE TUNE screen appears.



4 Press MENU+/- **9** to adjust the receiving condition.

5 Press the red button **17** to store the adjustment, or press the green button **17** not to store.

Then the normal screen appears. If you have pressed the green button, the fine tuned condition is cancelled once you choose another programme.

Tuning in to a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset.

1 Press C **16** on the Remote Commander. For cable channels, press C **16** twice.

The indicator "C" ("S" for cable channels) appears on the screen.

2 Enter a double-digit channel number using the number buttons (e.g. for channel 23, first press 2, then 3).

The channel appears.

However, the channel is not stored.

Teletext Operation

TV stations broadcast teletext programmes via the TV channels. For basic operation of teletext, use the simple side of the Remote Commander. For the advanced features of teletext, use the buttons indicated in green on the full function side of the Remote Commander.

Basic Teletext Operation

Switching Teletext on and off

1 Select the channel which carries the teletext service you wish to view.

2 Press  **11** to display Teletext.

If no teletext signal is broadcast, the indication P100 is displayed on a black screen.



3 Input three digits for the page number using the number buttons **4**.

The numbers are displayed on the screen and the requested page appears in a few seconds.

Note: If you make a mistake, type in any three digits, then re-enter the correct page number.

4 Press  **3** to return to the TV mode.

Note: To change the teletext channels. First press  **3** to return to the TV mode, then repeat steps 1 to 3.

Note: If the signal of a TV channel is weak, teletext errors may occur.

Advanced Teletext Operation

Using Fastext

With Fastext you can access pages with one button press. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons **6** on the Remote Commander.

Press the corresponding colour button **6** on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed in a few seconds.

Requesting the Index page

Press  **17**. The Index page appears.

Accessing the next or preceding page

Press  (PAGE +) or  (PAGE -) **18**. The next or the preceding page appears on the screen.

Superimposing the teletext display on the TV picture

Press  **11** once if you are in text mode or press  **11** twice if in TV mode.

To return to the normal teletext display press  **11** again.



Preventing a teletext page from being updated or changed

Press  (HOLD) **2**. The HOLD symbol  appears on the screen and the selected subpage is held until you press  **2** to cancel.

Enlarging the teletext display

Press  **13** once to enlarge the upper half. Press twice to enlarge the lower half. Press again to restore the normal display.



Revealing concealed information (e.g. answers to a quiz)

Press  (REVEAL) **14**. The information is revealed. Press  **14** again to conceal the information.

Watching TV while waiting for a requested page to be displayed

1 Request a new teletext page.

2 Press  (TEXT CL) **12**.

The TV programme is displayed and the symbol  is displayed at the top of the page.

Note: When the requested page is available the page number is displayed at the top of the screen.

3 Press  **11** to view the page.

Note: To cancel the request

Display the teletext page, then press  **11**. The request is now cancelled. Press  **3** to resume TV mode.

Using the Favourite Page system

You can store up to four of your favourite teletext pages per programme with the help of the Favourite page system. In this way you have quick access to the pages you watch frequently.

Storing the Favourite Pages

1 Select the page you would like to store using the number buttons **4**.

2 Press  **15** twice.

The colour prompts at the bottom of the screen flash.

3 Press any of the colour buttons **6** on the Remote Commander to store the selected page.

The page is now stored on this button.

Repeat steps 1 to 3 for the other 3 pages available.

Displaying the Favourite pages

1 Press  **15**.

2 Press the colour button **6** corresponding to the colour prompt onto which the desired page is stored.

The page is requested. (It may take a few seconds to be received).

Note: Step 1 must be taken before every favourite page selection, otherwise the normal Fastext facility operates.

Using the Time Function in the TV mode

Press  **12** to request the time. Press again to cancel the request.

Note: This function is available only when teletext is broadcast.

Connecting Other Equipment

You can connect optional audio/video equipment to this TV such as VCRs, video disc players, cameras or stereo systems.

Connector	Acceptable input signal	Available output signal
① M (AV1/RGB)	Audio/video and RGB signal	Audio/video signal from TV Tuner
② L (AV2) (YC2)	Audio/video and S video signal	Audio/video signal from selected source
③ H (AV3)	Audio/video signal and	No outputs
④ I (YC3)	Audio/S video signal	

To watch a video input picture, press ② until the desired video input appears.

To return to the normal TV picture, press ② repeatedly or press ③.

Note: If you have a decoder, connect it to ① M.

Connecting a VCR Using the TV Aerial Terminal

Connect the aerial output of the VCR to the aerial terminal K of the TV. It is recommended to tune in the VCR signal to programme number "0". For details, see "Tuning in to Channels Manually" on page 18.

Note: S video input (Y/C input) ① L

Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals.

Separating the Y and C signals prevents them from interfering with each other and therefore improves the picture quality (especially luminance). This TV is equipped with 2 video input terminals through which these signals can be input directly.

Checking and Selecting the Input and Output Sources Using the Menu

You can display a menu screen to see which input and output source are selected. You can also change the selection using this menu.

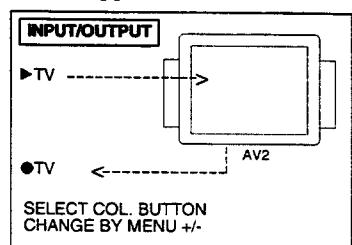
Checking the Input and Output Sources

1 Press MENU ⑦.

The MENU screen appears

2 Press the blue button ⑦ to select INPUT/OUTPUT.

The INPUT/OUTPUT screen appears.



Selecting an Input Signal

Press the red button ⑦ to select INPUT. Press MENU +/- ⑨ to select the desired input source.

You can select among the following sources:

TV ↔ AV1 ↔ RGB ↔ AV2 ↔ YC2 ↔ AV3 ↔ YC3

Selecting an Output Signal

The ② connector L outputs the source input from the other connectors. Press the green button ⑦ to select OUTPUT. Press MENU +/- ⑨ to select the desired output source.

You can select among the following sources:

TV ↔ AV1 ↔ AV2 ↔ YC2 ↔ AV3 ↔ YC3

Note: Press MENU ⑦ twice or wait until the menu displays disappear automatically to return to the normal screen.

Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most Sony remote-controlled video equipment such as: Beta, 8mm or VHS VCRs or video disc players.

Tuning the Remote Commander to the equipment

1 Set the VTR 1/2/3 MDP selector ⑩ according to the equipment you want to control:

VTR 1: Beta or VCR

VTR 2: 8mm VCR

VTR 3: VHS VCR

MDP: Video Disc Player

2 Use the buttons ① to operate the additional equipment.

Note: If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.

Note: If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

Note: When you use the ● (record) button, make sure to press this button and the one to the right of it simultaneously.

Using Headphones

You can utilise headphones. Connect them to the headphone jack J, then the sound from the speakers goes off.

Note: You can't control the sound adjustment except for volume.

For your information

Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

No picture (screen is dark), no sound

- Plug the TV in.
- Press ① **A** on the TV. (If the standby indicator **B** is lit, press ② **3** or any number button **4** on the Remote Commander.)
- Check if the selected video source is on.
- Turn the TV off for three or four seconds and then turn it on again using ① **A**.

Poor or no picture (screen is dark), but good sound

- Press MENU **7** to enter the MENU screen, and press the red button **17**, then adjust ① and ②.

Good picture but no sound

- Press **4** + **19**.
- If **8** is displayed on the screen, press **8** **1**.

No colour for colour programmes

- Press MENU **7** to enter the MENU screen, and press the red button **17**, then adjust ③.

Remote Commander does not function

- Replace the battery.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

Specifications

Television system	B/G/H, D/K
Colour system	PAL, SECAM NTSC 3.58 (video input only) NTSC 4.43 (video input only)
Channel coverage	See "Receivable Channels and Channel Displays"
Picture tube	KV-X2501: Hi-Black Trinitron Approx. 63cm (25 inches) (Approx. 60cm picture measured diagonally) 110° deflection KV-X2901: Hi-Black Trinitron Approx. 72cm (29 inches) (Approx. 68cm picture measured diagonally) 110° deflection
Terminals Rear	- 1 21-pin Euro connector (CENELEC standard) - inputs for audio and video - inputs for RGB - outputs of TV video and audio - 2 21-pin Euro connector - inputs for audio and video - inputs for S video - outputs for audio and video (selectable)
Front	- 3 Video input-phono jack - 3 Audio input-phono jacks - 3 S video input-4-pin DIN - Headphone jack: stereo mini jack
Sound output	2x20W music power

Power consumption KV-X2501: 99W
KV-X2901: 108W

Dimension (WxHxD) KV-X2501
Approx. 575x500x487mm
KV-X2901
Approx. 656x566x518mm

Weight KV-X2501: Approx 33kg
KV-X2901: Approx 45kg

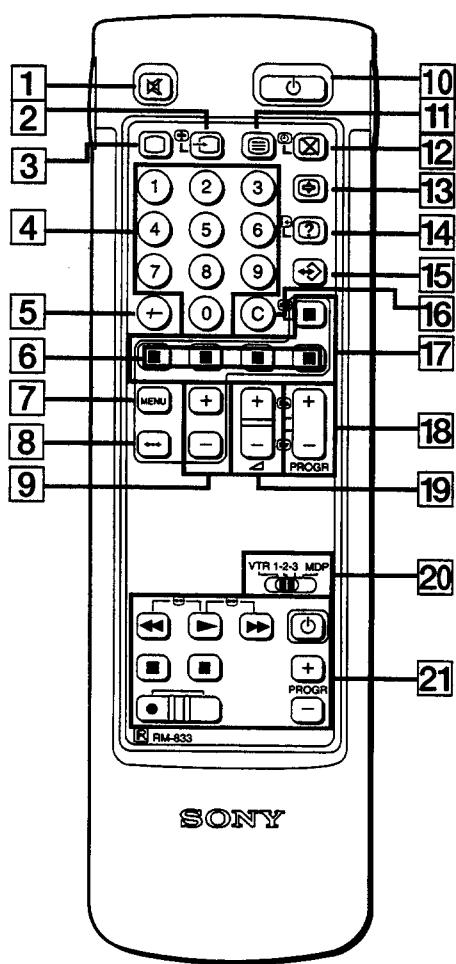
Supplied accessories Remote Commander RM-833,
Battery R6

Other features Fastext/Toptext

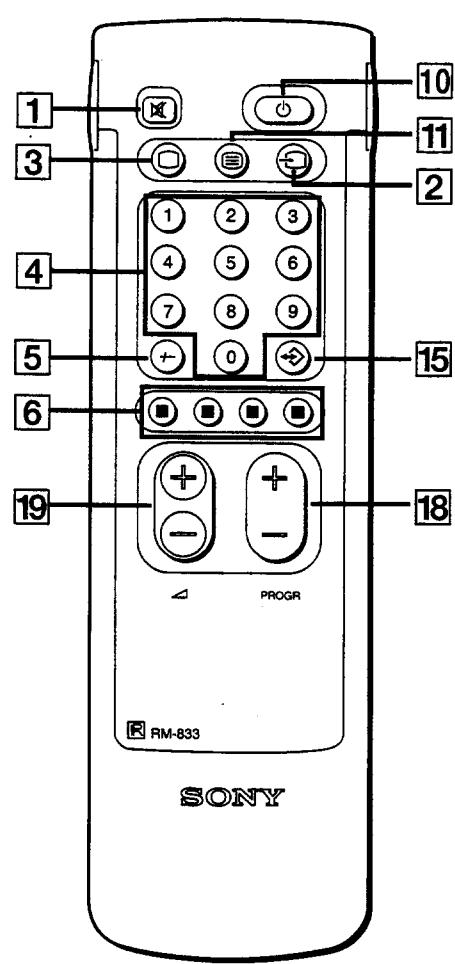
Receivable Channels and Channel Displays

TV System	Receivable Channels	Channel Displays
B/G/H	E2, E3 ... E12 E21, E22 ... E69	C02, C03 ... C12 C21, C22 ... C69
Cable TV(1)	S1, S2 ... S41	S01, S02 ... S41
Cable TV(2)	S01, S02 ... S05 M1, M2 ... M10 U1, U2 ... U10 A, B ... H H1, H2	S42, S43 ... S46 S01, S02 ... S10 S11, S12 ... S20 C13, C14 ... C20 C11, C12
ITALIA	R01, R02 ... R12 R21, R22 ... R69	C01, C02 ... C12 C21, C22 ... C69
D/K		

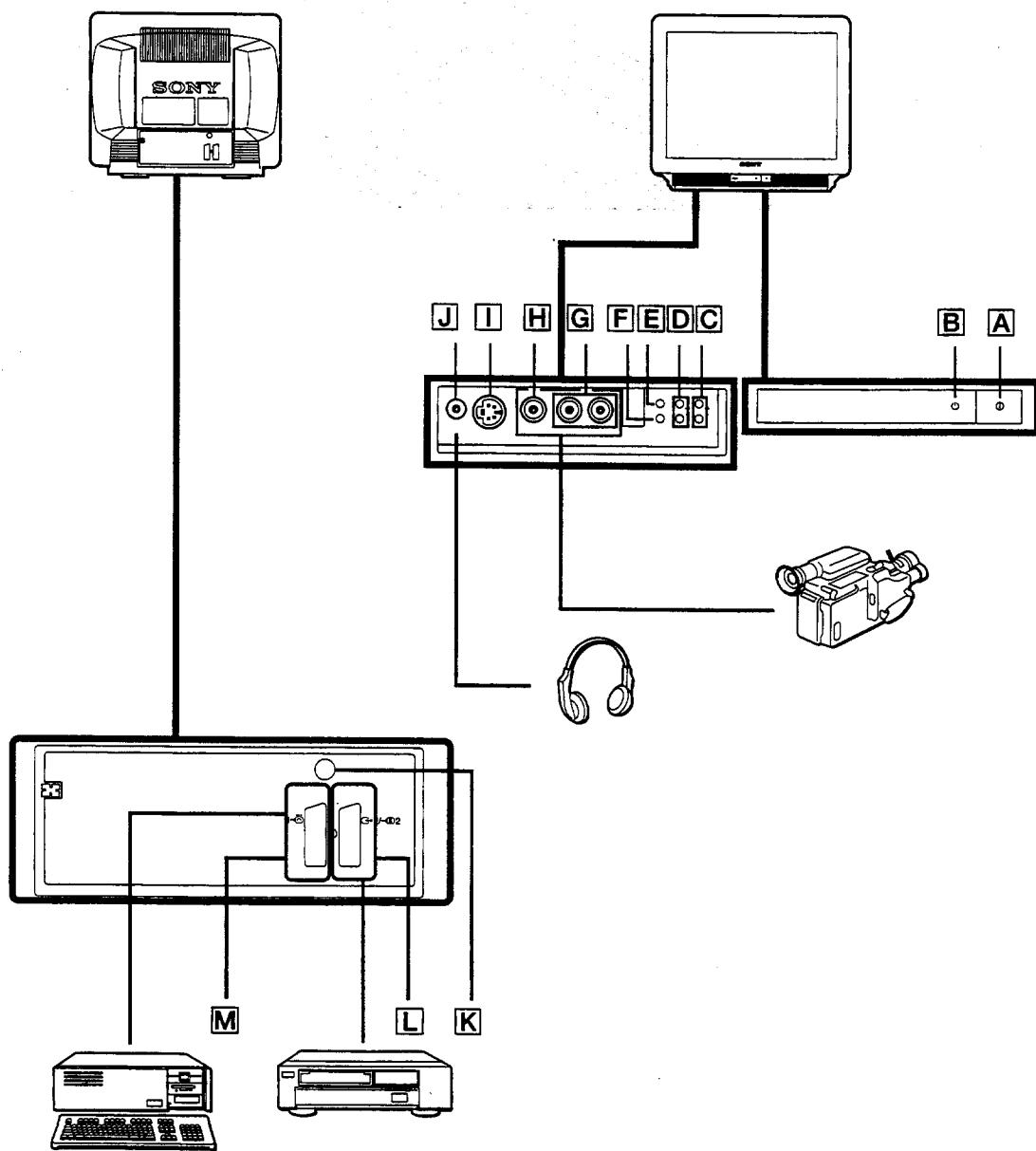
Design and specifications are subject to change without notice.



Full-Function Side

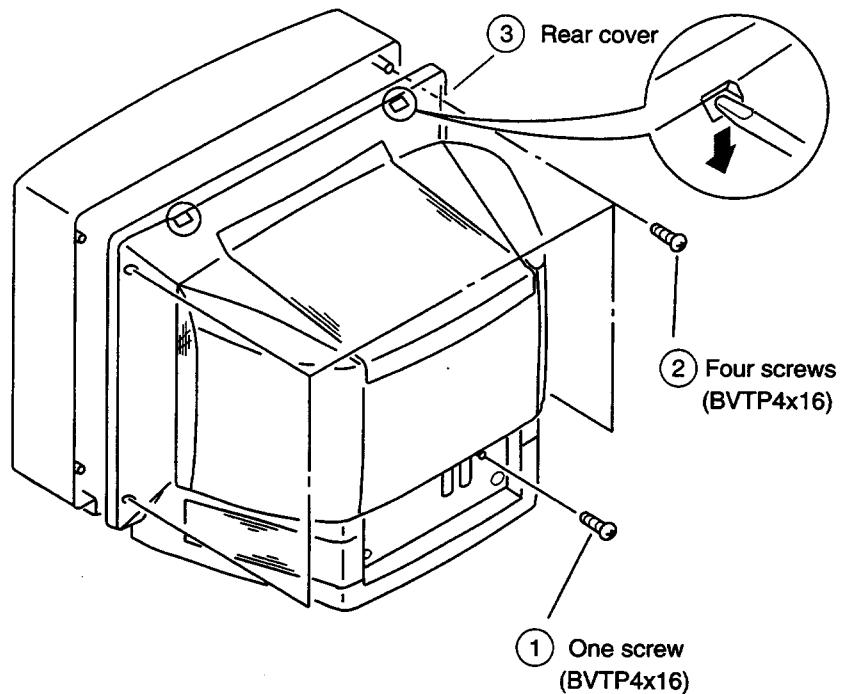


Simple Side

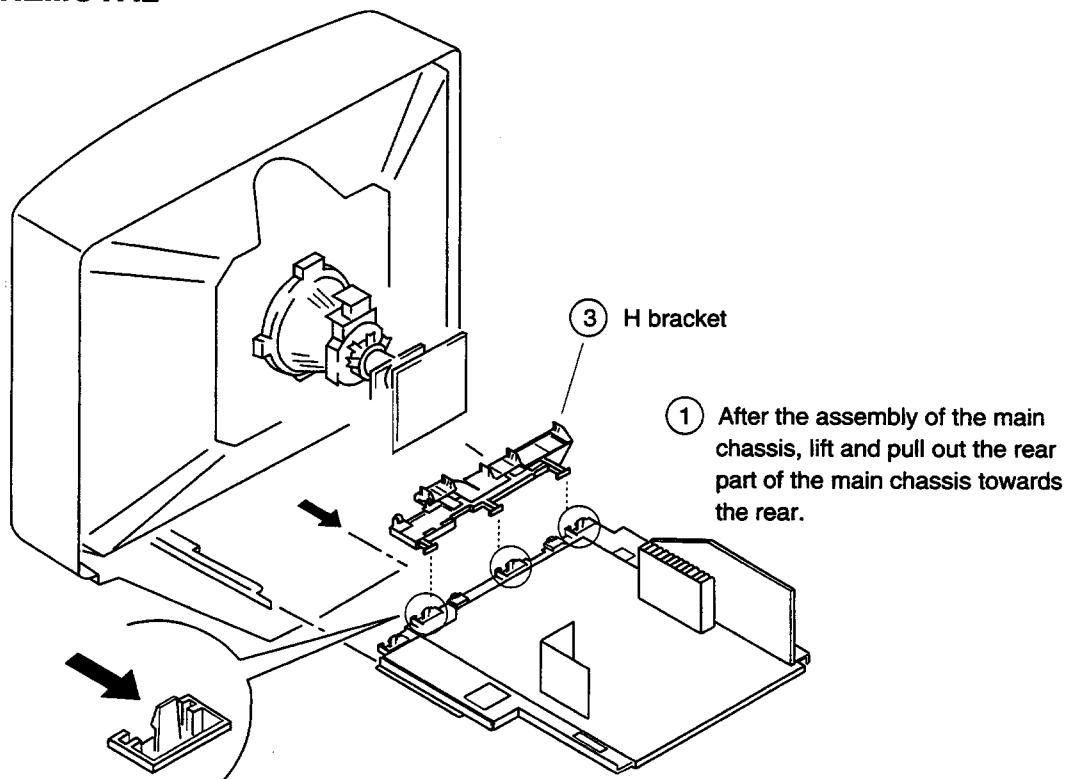


SECTION 2 DISASSEMBLY

2-1. REAR COVER REMOVAL

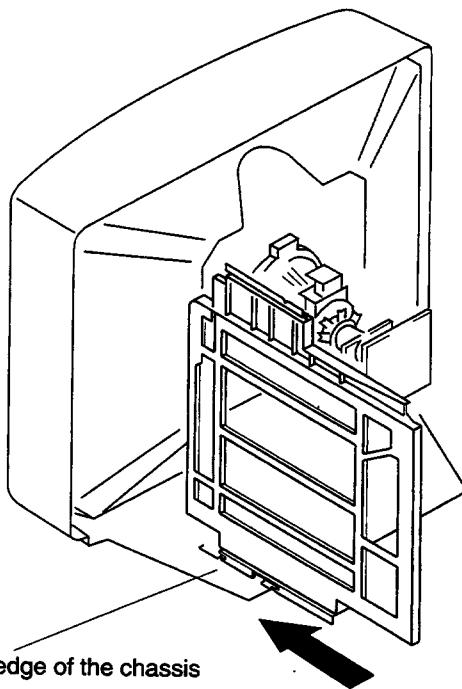


2-2. CHASSIS ASSY REMOVAL



- (2) Push the three claws of the main chassis in the direction of the arrow and remove the H bracket upwards.

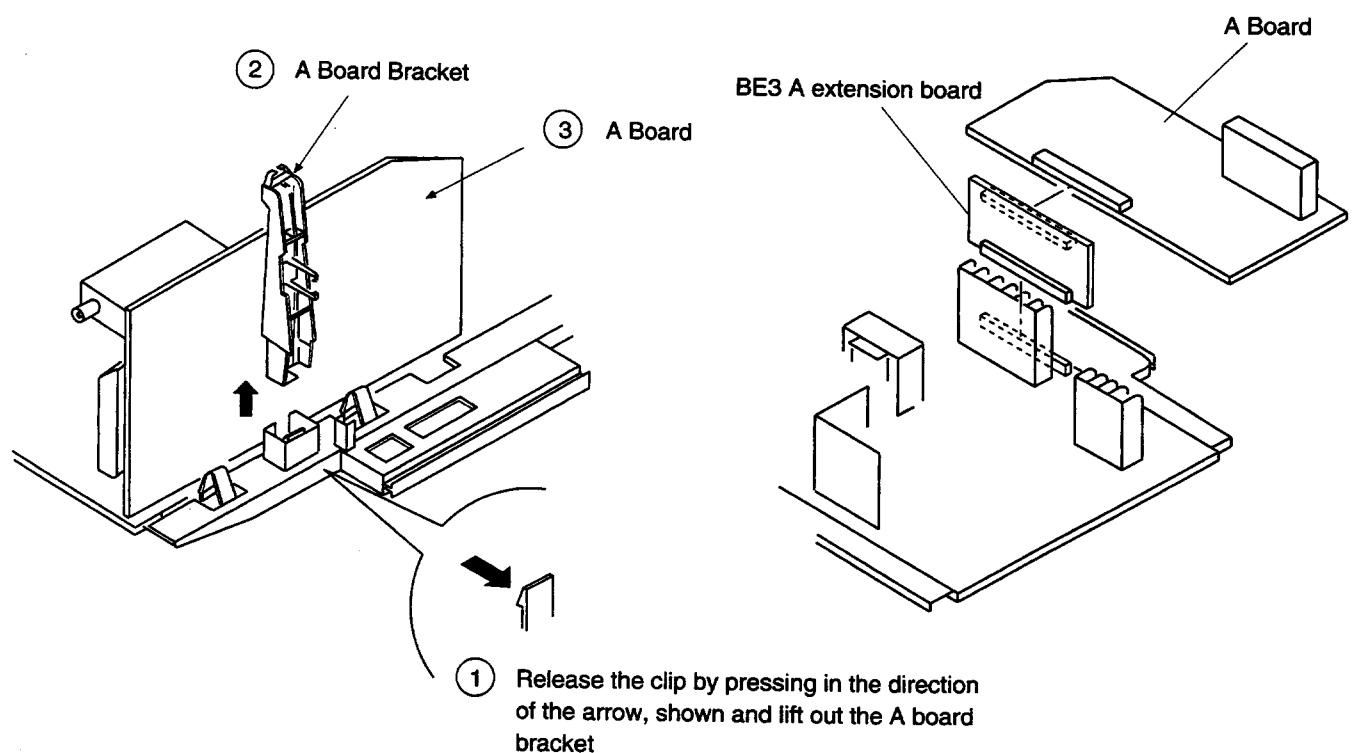
2-3. SERVICE POSITION



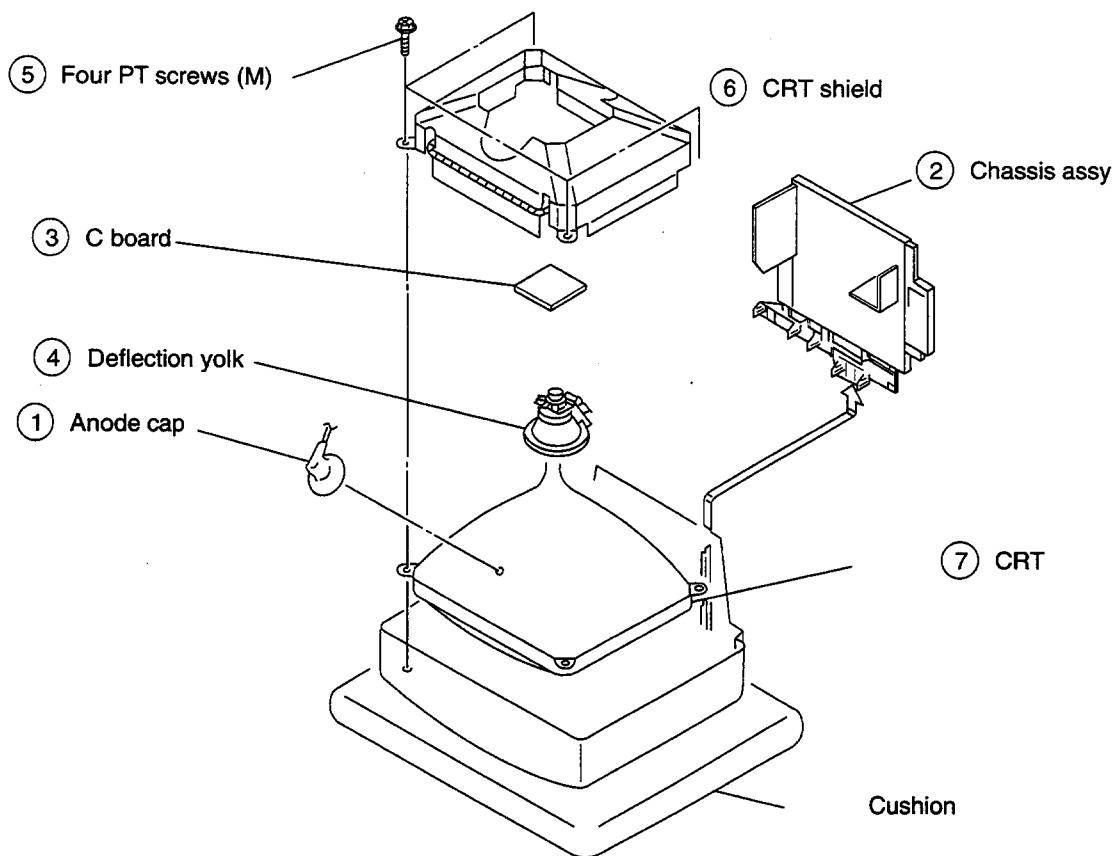
Locate the 2 slots on the edge of the chassis bracket in the locating holes and slide in the direction of the arrow

2-4. A BOARD REMOVAL

2-5. EXTENSION BOARD



2-6. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

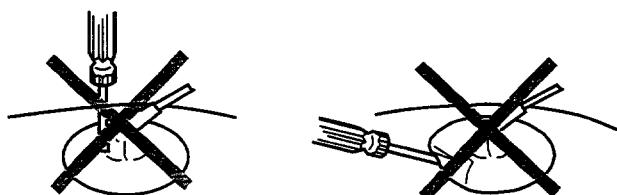
Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

• REMOVING PROCEDURES.

-
- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)
 - ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)
 - ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

• HOW TO HANDLE AN ANODE-CAP

- ① Don't damage the surface of anode-cap with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.
- ③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3

SET - UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to these settings :

● Contrast 80% (or remote control normal)
 ☀ Brightness 50%

- Carry out the following adjustments in this order :
- Beam landing
 - Convergence
 - Focus
 - White balance

Note: Testing equipment required.

- Color bar/pattern generator
- Degausser
- DC power supply
- Digital multimeter
- Oscilloscope

Preparation:

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

- Input the white signal with the pattern generator.
 CONTRAST } normal
 BRIGHTNESS }
- Position neck assy as shown in Fig.3-2.
- Set the pattern generator raster signal to red.
- Move the deflection yoke forward and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
- Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
- Switch the raster signal to blue, then to green and verify the condition.
- When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
- If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

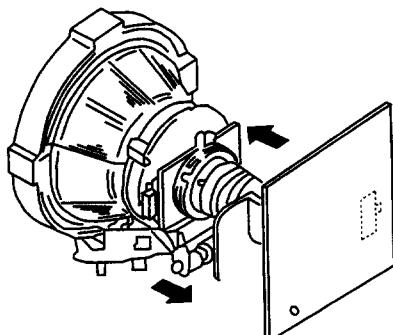


Fig. 3-1

Fig. 3-2

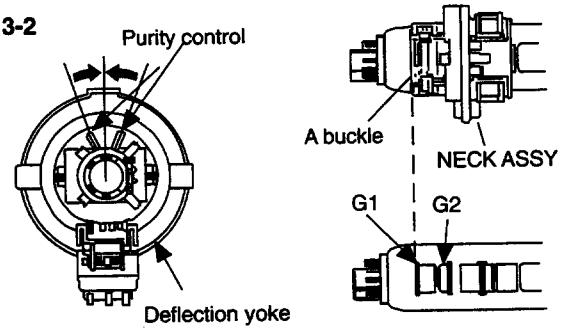


Fig. 3-3

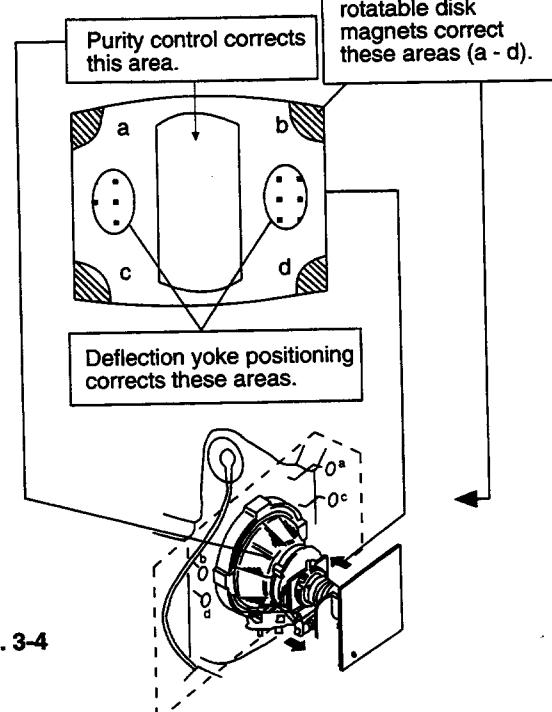
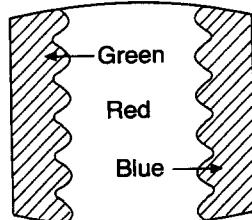


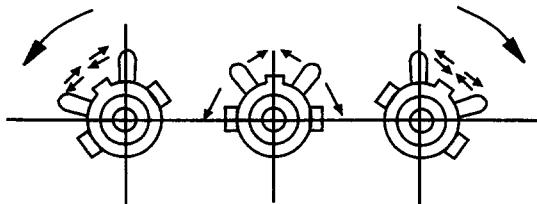
Fig. 3-4

3-2. CONVERGENCE

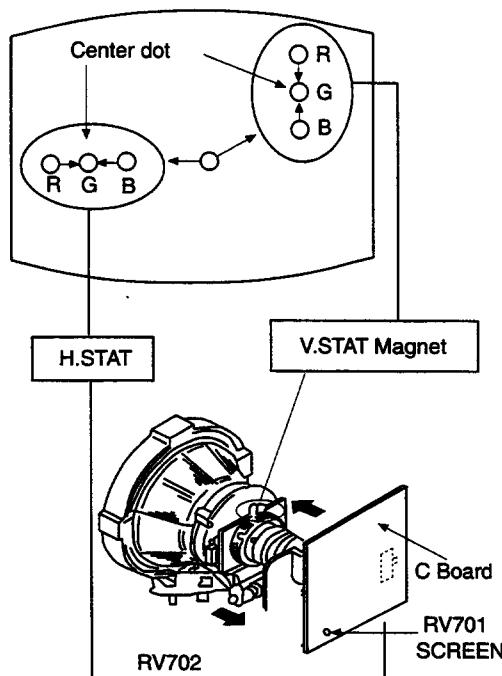
Preparation:

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

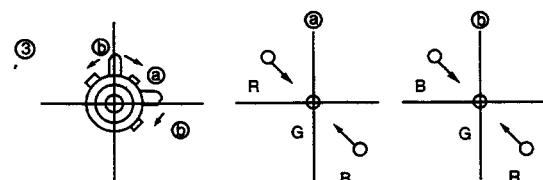
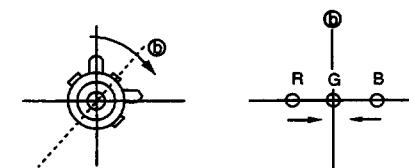
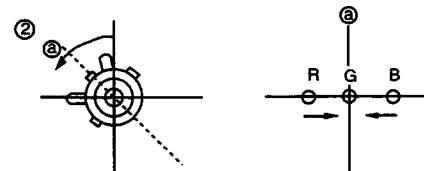
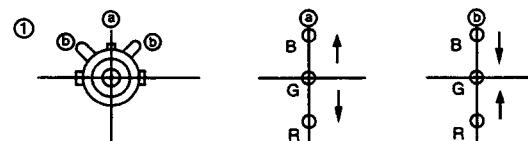


(1) Horizontal and vertical static convergence

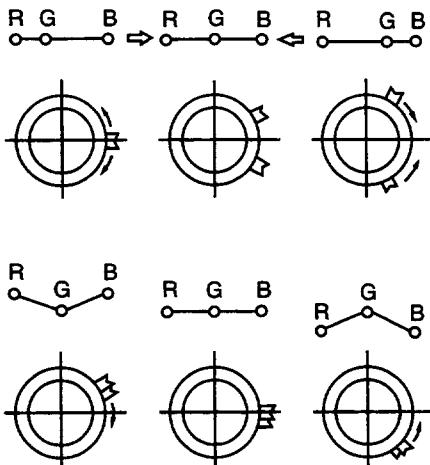


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

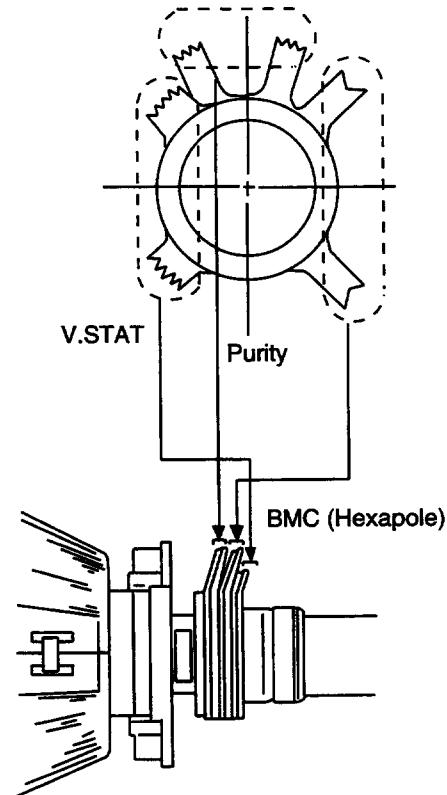
4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



- The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of the screen (by moving the dots in the horizontal direction).

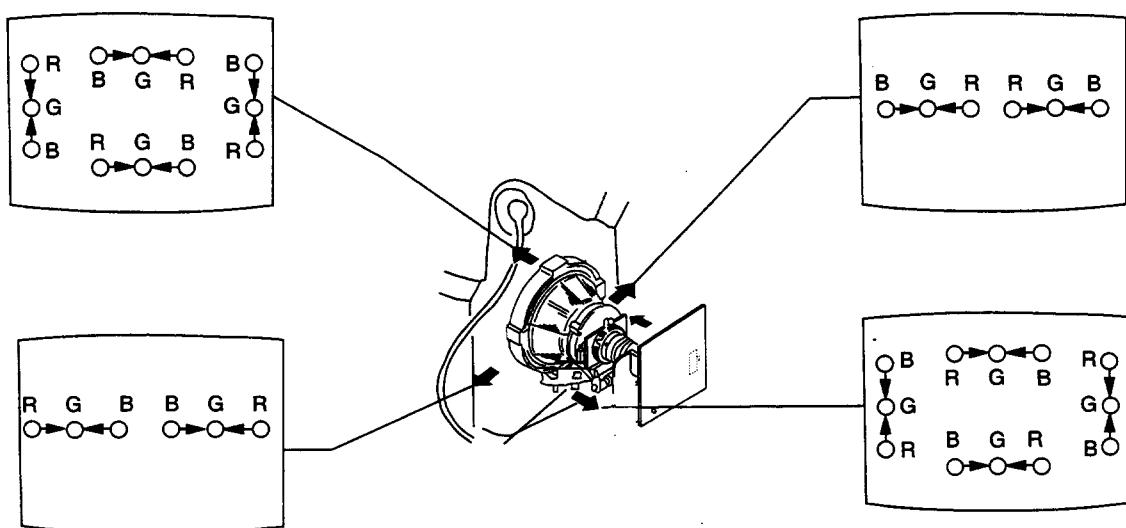


(2) Dynamic convergence adjustment.

Preparation:

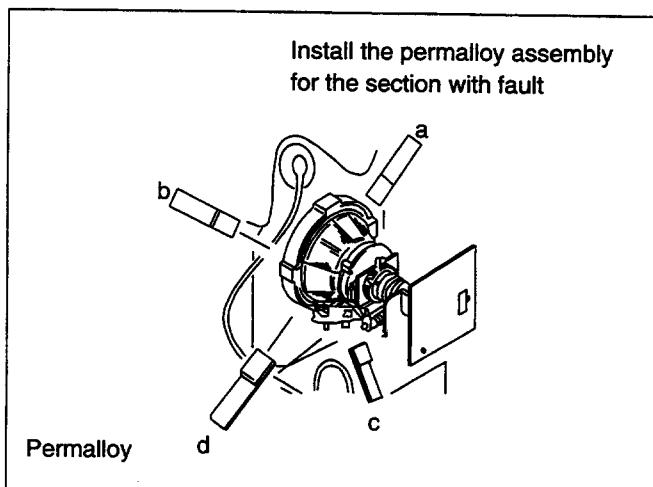
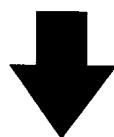
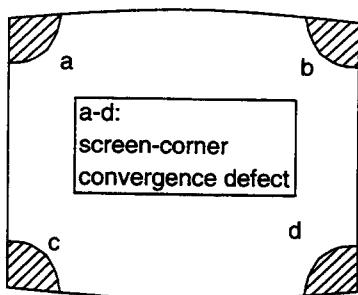
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
- Slightly loosen the deflection yoke screws.

- Remove the deflection yoke spacer.
- Move the deflection yoke as shown in the figure below and optimize the convergence.
- Tighten the deflection yoke screws.
- Re-install the deflection yoke spacer.

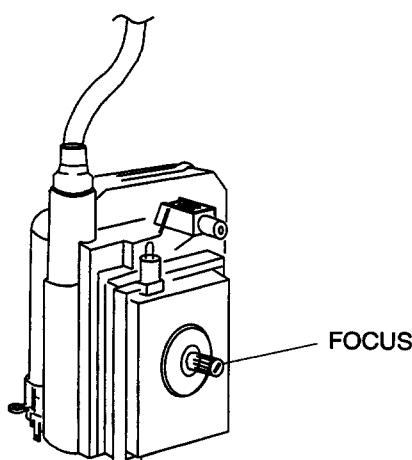


(4) Screen corner convergence.

If you are unable to adjust the corner convergence properly, correct them with the use of permalloy assemblies.

**3-3. Focus**

Adjust the focus to optimize the screen.

**3-4. WHITE BALANCE****Screen G2 Setting**

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 180V DC to the R, G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

White balance adjustment

1. Receive an all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" on how to enter service mode.)
3. Select TDA8366 1 on menu.

DEVICE : TDA8366 1

STAT : 12

- NEXT
 PREVIOUS
 OK

USE COLOUR KEYS
 SONY TEST MENU.

4. Press the White button on the Remote Commander to enter into the device Menu.
5. Press the Red button 10 times "Next" "Next" "Next" to select HWB RED, adjust to 040.
6. Press the Red button to select HWB GREEN, adjust with the + and - menu buttons so that the white balance becomes optimum.
7. Press the Red button to select HWB BLUE, adjust with the + and - menu buttons so that the white balance becomes optimum.
8. Press the TV button twice on the Remote Commander to store the data and return to TV operation.

SECTION 4

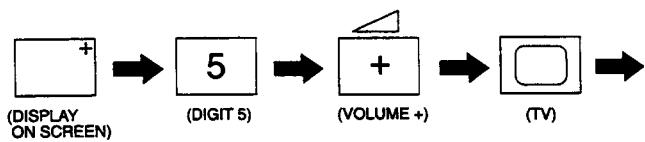
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-833.

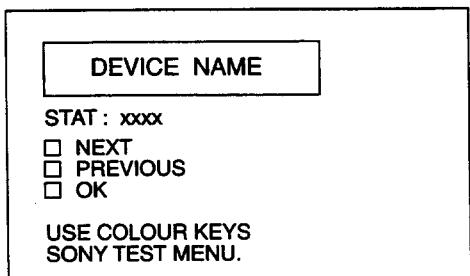
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set and enter into standby mode.
2. Press the following sequence of buttons on the Remote Commander.

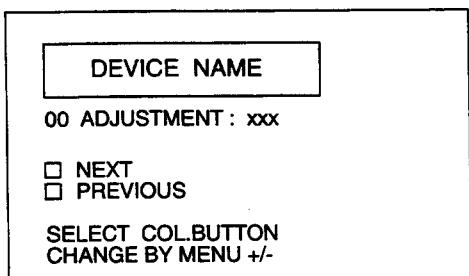


"TT" will appear in the top right corner of the screen. Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



4. Press the Red (Next) and Green (Previous) buttons to select the device corresponding to the adjustment item from the table. Then press the White button (OK).



5. Press the Red (Next) or Green (previous) buttons to select the adjustment item. Then press the ∇ and Δ buttons to change the data to comply with each standard.
6. Turn off the power to quit the service mode when adjustments are completed.

Initial Conditions for setup of TDA8366, TDA6612 and SAA7283. (Stereo Models Only)

TDA8366 1	INIT VALUE	TDA8366 2	INIT VALUE
Hue	31	Interlace	00
H Shift	Adj	Sync Mode	00
H Size	Adj	Col Dec	00
Pin Amp	Adj	Vert Div	00
Com Pin	Adj	Vid ID	00
Tilt	Adj	EHT Track	01
V.Linear	Adj	En V Grd	00
V.Size	Adj	Serv Blk	00
S.Corr	Adj	OVP Mode	00
V.Cent	Adj	Aspect R	00
HWB Red	Adj	Start Freq	00
HWB Green	Adj	Y/C Input	00
HWB Blue	Adj	PAL/NTSC	00
Peaking	8	Xtal PLL	00
Bright	32	Y Delay	07
Colour	32	RGB Blk	00
Picture	37	Noise Cor	00
AGC Set	00	Fast Blk	01
Srce Sel 1	00	AFC Wind	00
Srce Sel 2	00	IF Sensty	00
Time Con	03	Mod Std	00
Xtal Ind	03	Vid Mute	01
FF Freq	02		

TDA6612	INIT VALUE	TDA6612	INIT VALUE
MPX Per	00	Mute 2	01
Quasi St	00	C1/2LS	00
Bass Exp	00	C1/2KH	00
H Pulse	00	Mono	01
Matrix St	00	Scart	00
Bypass	00	Scart D	00
Vol L Sp	07	AM	00
Vol R Sp	07	SAA7283	INIT VALUE
Vol HP	00	Mon M1/M2	01
Pll Sync	00	DM Select	01
Mute 3	01	SSWIT 123	07
Treble	08	Port 2	00
Bass	09	Mute Def	00
X Talk Adj	Adj	AMDIS	00
Mute 1	00	E Max	80
		E Min	01

4-2. TEST MODE 2 :

Is available by pressing Test button twice, OSD 'TT' appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press 0 twice, or switch the TV into Stand-by Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Ageing Condition (Volume min., Picture max., Brightness max.)
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	"Menu" Flag request
10	Tenth entry is deleted
11	dummy
12	dummy
13	dummy
14	Forced AV 16:9 detection on/off
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM.
17	Preset Label for AV Sources
18	RGB Priority on/off
19	Clear all preset labels
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24	Set destination = U RGB Priority = Off
25	Set destination = D RGB Priority = Off
26	Set destination = B RGB Priority = On
27	Set destination = K RGB Priority = Off
28	Set destination = L RGB Priority = Off
29	Set destination = E RGB Priority = Off

30	Tenth entry is deleted
31	Set Destination = A RGB Priority = On
32	dummy
33	Auto AGC
34	N/S Pin Adjust
35	Manual AGC Adjust
36	dummy
37	dummy
38	dummy
39	dummy
40	Tenth entry is deleted
41	Re-initialise NVM
42	Production use only
43	Initialise Geom Settings
44	Initialise all favorite pages = 100
45	Channel locks = off
46	IR Channel Presetting Mode The channel presetting can be done by a Special IR Transmitter (Ver 2 and above software only)
47	dummy
48	Set NVM testbyte to 44h
49	Erase the NVM Testbyte (this byte detects already stored NVM's) After selecting this function, switch TV Off and On -> the NVM will be preset by μ -Controller.

In Test Mode the Menu display is switchable by the Speaker-Off button.

Note : For Test Modes 41 - 49 it is necessary to ensure that the TV is set to Prog 59.

SUB BRIGHTNESS ADJUSTMENT

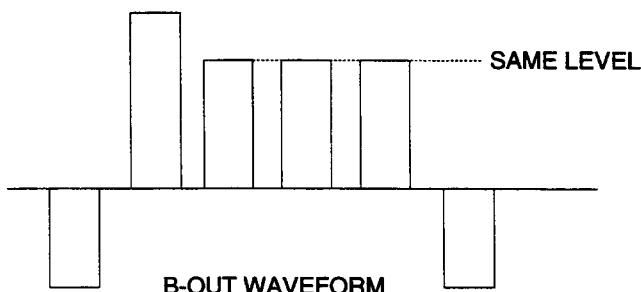
1. Input a Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of grey scale and CUT-OFF 20-IRE are only slightly visible on screen.

SUB CONTRAST ADJUSTMENT

1. Input a video that contains a small 100% area on a Black Background.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Connect oscilloscope to pin (1) of CN703 (R OUT) and adjust HWB Red data of TDA8366 1 to obtain 2.3Vp-p.

SUB COLOR ADJUSTMENT

1. Input a PAL color bar signal.
2. Connect an oscilloscope to pin (3) of CN703 (B OUT) on the C board.
3. Enter into service mode and press 22.
4. Adjust data so that the right sides of the waveform are set to the same level.

**STEREO SEPARATION ADJUSTMENT**

1. Input a 1KHz stereo signal to the L-ch and a 400Hz stereo signal to the R-ch.
2. Enter into service mode and select the "Test Menu" to be TDA6612.
3. Select the Stereo Xtalk Adjustment Menu, by using the Red (Next) and Green (Previous) buttons.
4. Monitor the Scart 1 L-channel output and adjust the data so that the R-channel sound is not detected in the L-channel.

I.F. COIL ADJUSTMENT (T101) - B/G, D/K, I AND L STANDARD FOR CONTINENTAL MODELS.

1. Apply a 38.9MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

I.F. COIL ADJUSTMENT (T101) - I, STANDARD FOR U.K. MODELS.

1. Apply a 39.5MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

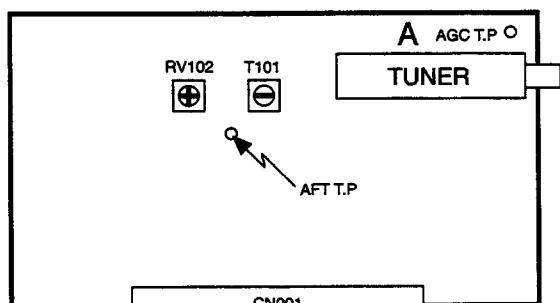
L, BAND 1 ADJUSTMENT (RV102) - L, STANDARD FOR FRENCH MODELS.

1. Apply a 33.95MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for positive modulation and system L band 1.
3. Measure the voltage at the AFT test point and adjust (RV102) to obtain 2.4V +/- 0.2V.

Note : Only adjust RV102 after T101 has been correctly adjusted.

AGC ADJUSTMENT

1. Receive an off-air signal.
2. Enter the service mode, ("Test" "Test") and 35.
3. Adjust the data so that there is no snow or cross-modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



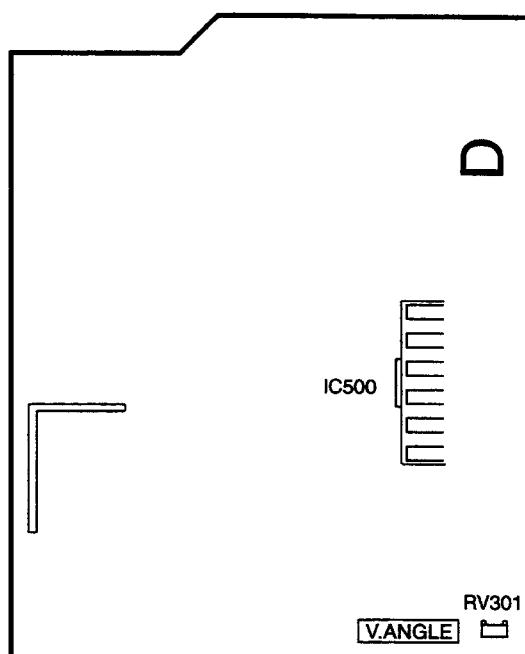
- A Board component side -

DEFLECTION SYSTEM ADJUSTMENT

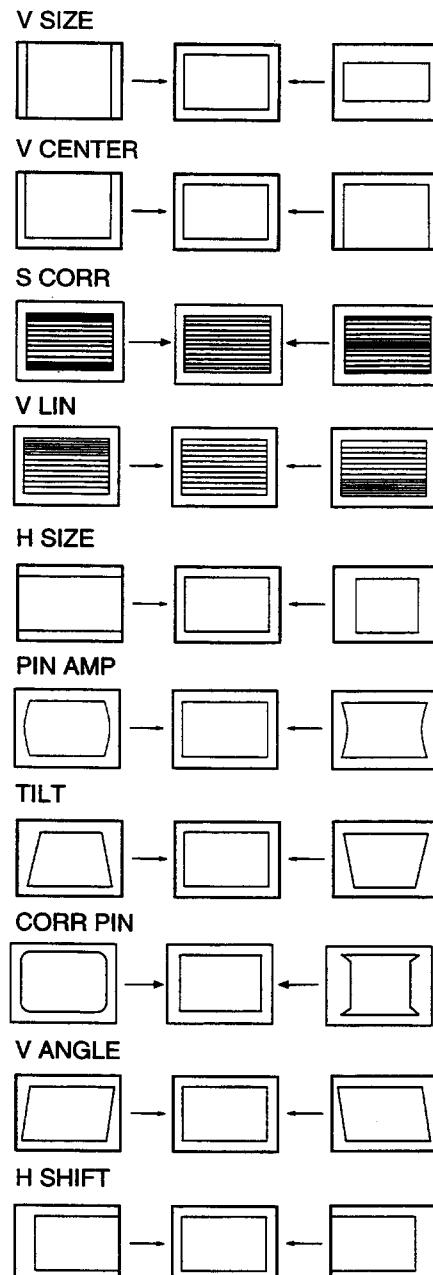
1. Enter into service mode.
2. Select and adjust each item in order to obtain the optimum image.

Item No	Adjustment item.	Data Amount
03	H SHIFT	ADJ.
04	H SIZE	ADJ.
05	PIN AMP	ADJ.
06	CORR PIN	ADJ.
07	TIILT	ADJ.
08	V LINEAR	ADJ.
09	V SIZE	ADJ.
0A	S CORR	ADJ.
0B	V CENTER	ADJ.

Note : V ANGLE is adjusted by a Variable Resistor on the 'D' Board (RV301)



- D Board Component Side -



4-3. BE3 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-3 chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the led (Series of flashes which must be counted) See Table 1., on fatal errors are reported with this method.

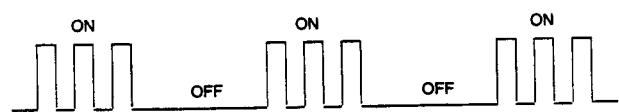
If a fatal error is found the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue operation.

Table 1

Device	LED Error Count	Fatal Error
NVM	2 .. 9	✓
Teletext	10	
Jungle	11	✓
Video_sw	12	
Tuner	13	✓
Nicam	14	
Audio_cont	15	✓

Flash Timing Example : e.g. error number 3.

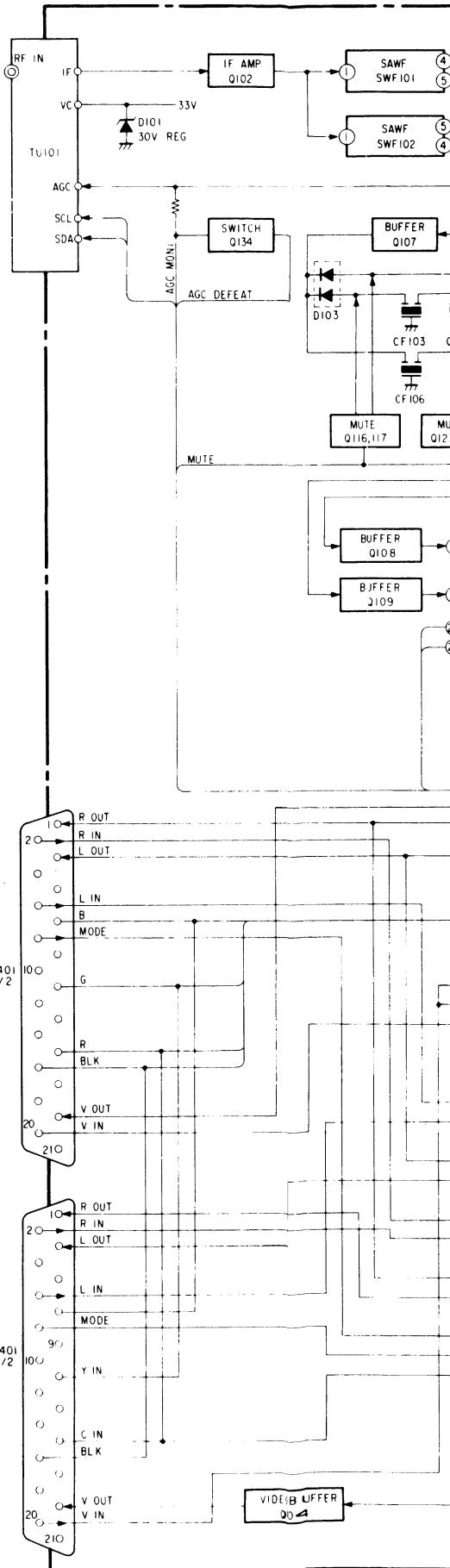
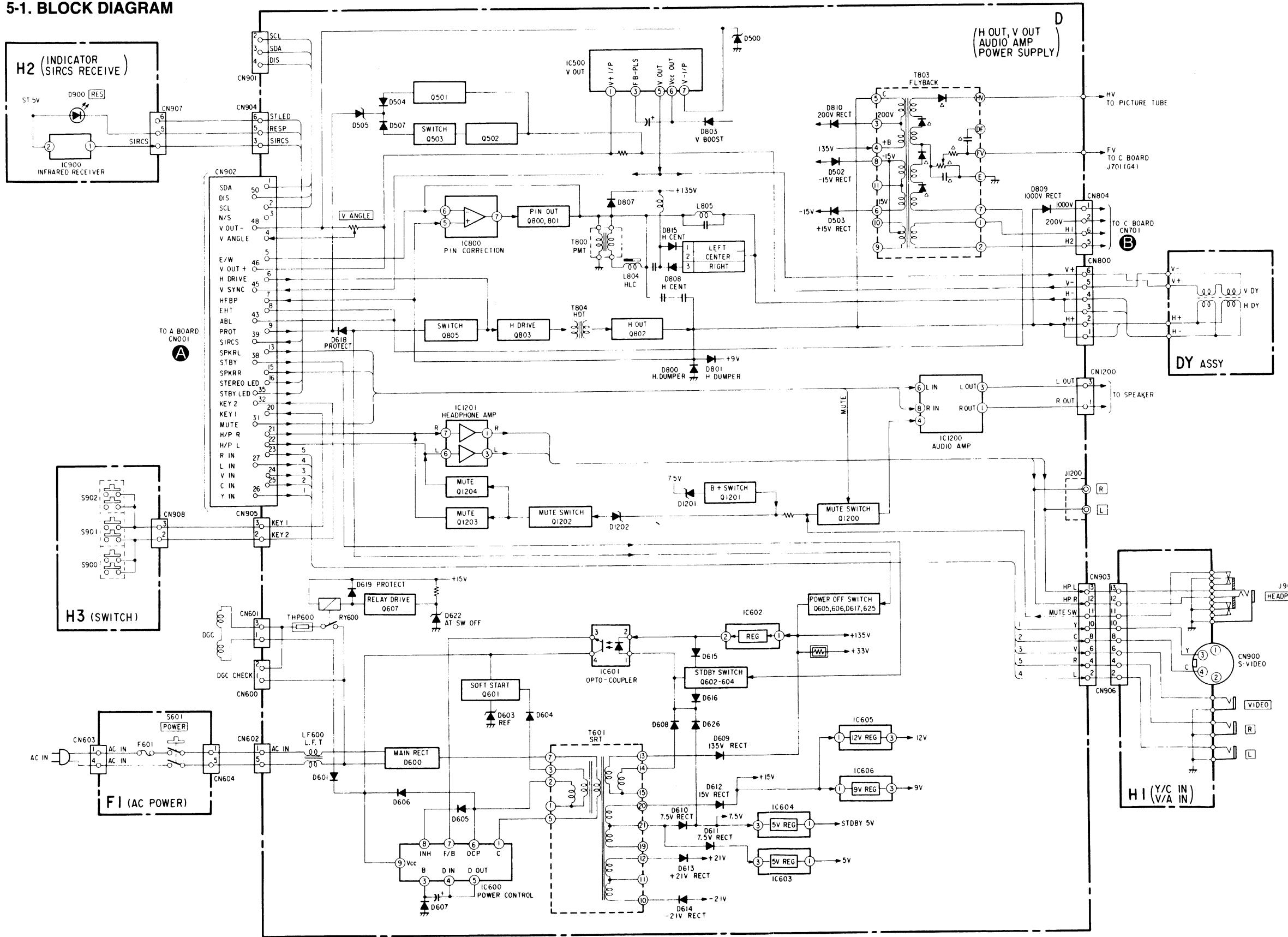
Stby LED

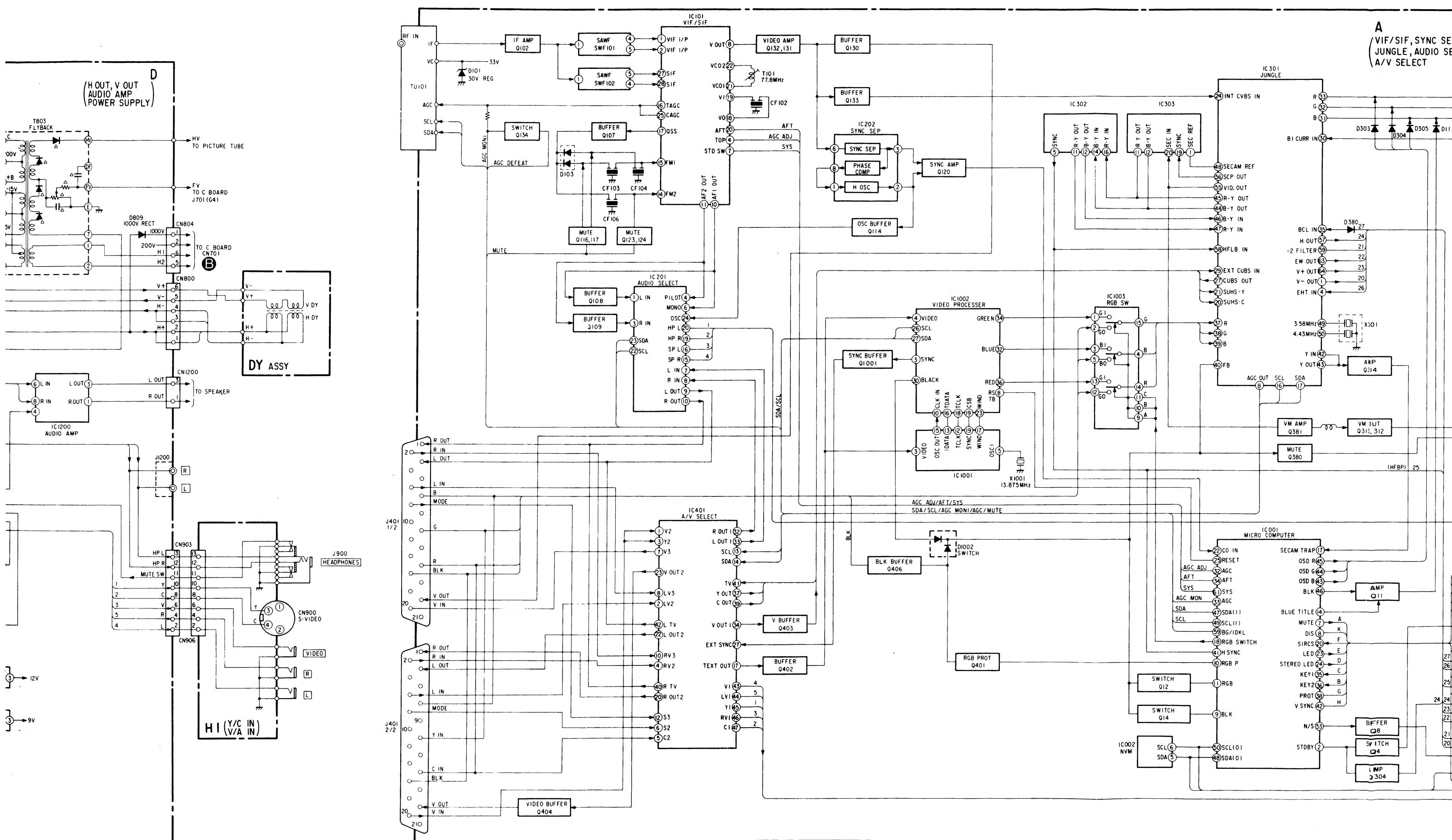


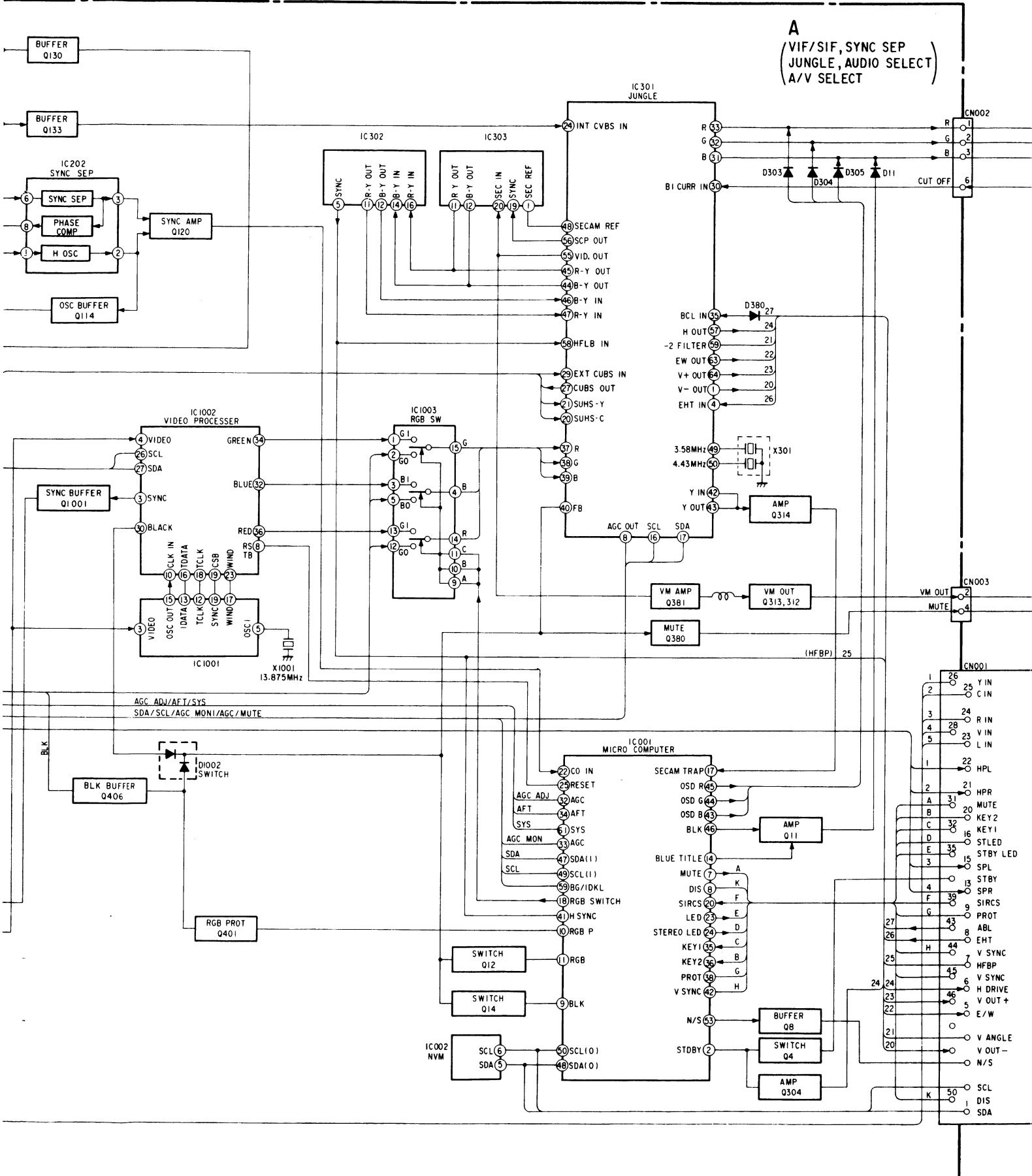
MEMO

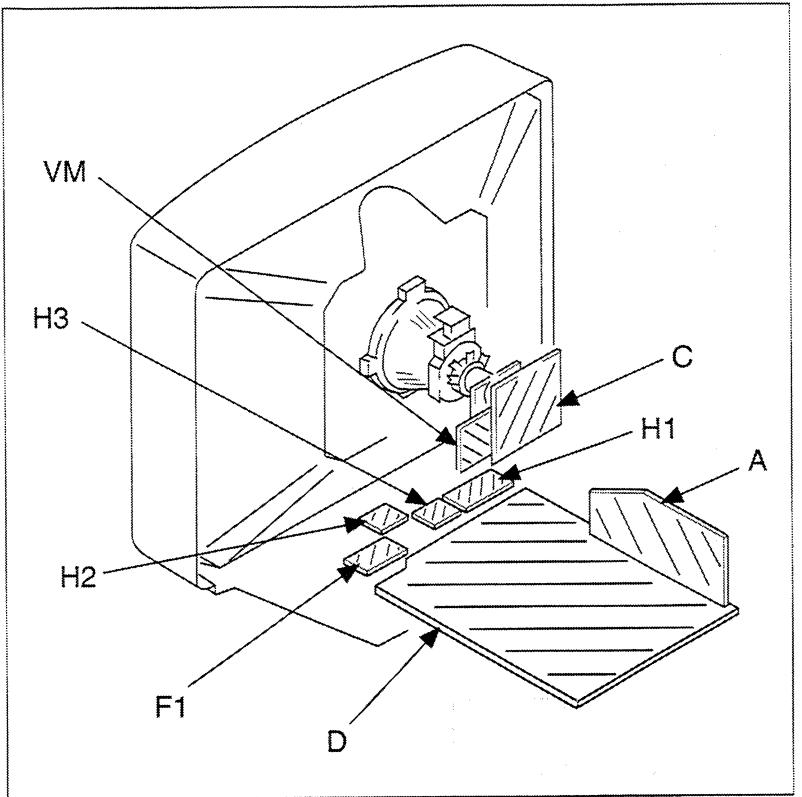
SECTION 5 DIAGRAMS

5-1. BLOCK DIAGRAM









5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

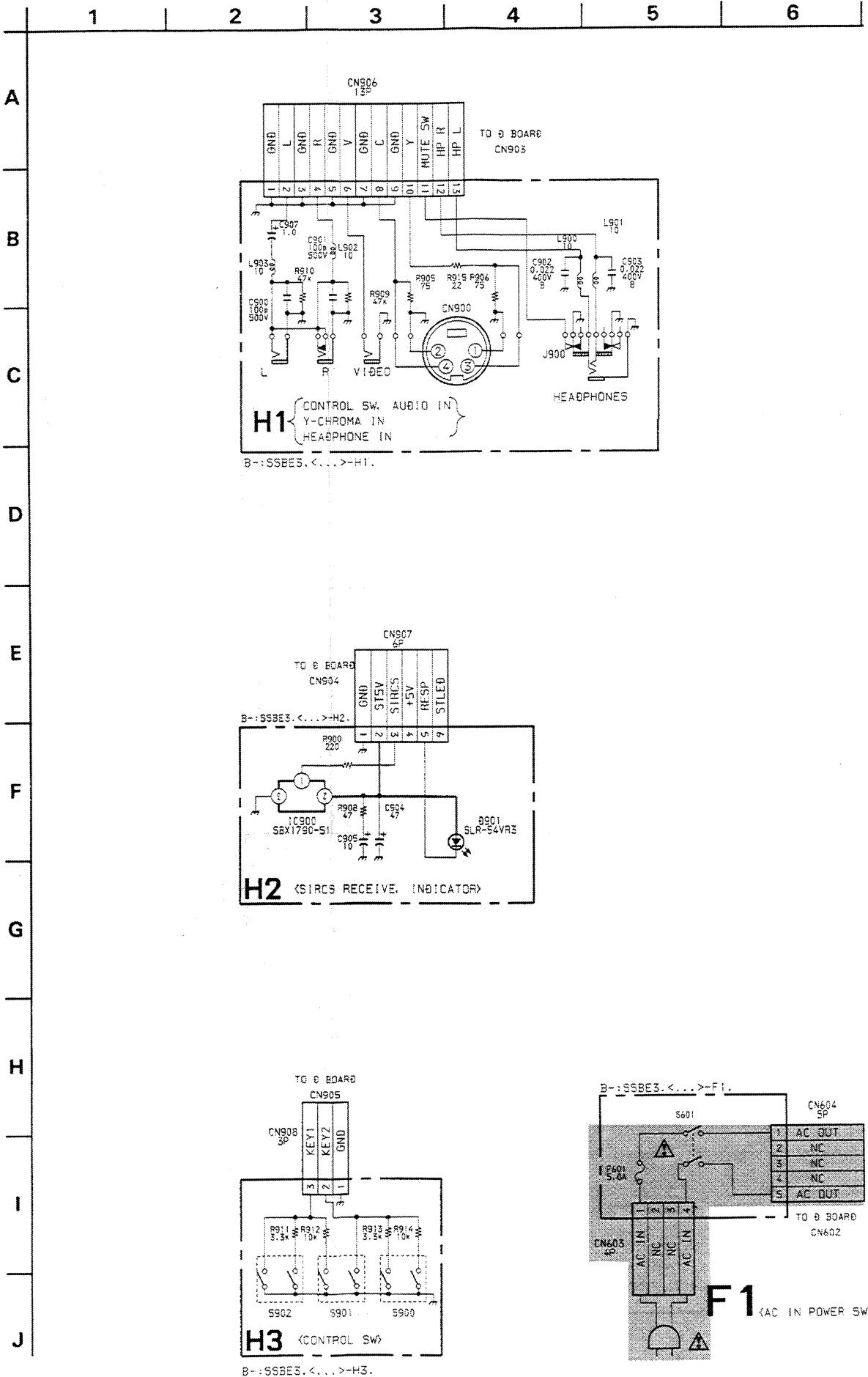
- All capacitors are in μF unless otherwise noted.
 μF : $\mu\mu\text{F}$ 50VW or less are not indicated except for electrolytic.
 - Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
 Rating electrical power : 1/4W
 - Chip resistor is in $1/10\text{W}$.
 - All resistors are in ohms.
 $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{K}\Omega$
 -  : nonflammable resistor.
 -  : fusible resistor.
 - Δ : internal component.
 -  : panel designation or adjustment for repair.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - All voltages are in V.
 - Readings are taken with a $10\text{M}\Omega$ digital multimeter.
 - Readings are taken with a color-bar signal input.
 - Voltage variations may be noted due to normal production tolerances.
 -  : B+ bus.
 -  : B- bus.
 -  : signal path.(RF)
 -  : earth - ground
 -  : earth - chassis

Reference information	
RESISTOR	RN : METAL FILM
	RC : SOLID
	FPRD : NONFLAMMABLE CARBON
	FUSE : NONFLAMMABLE FUSIBLE
	RS : NONFLAMMABLE METAL OXIDE
	RB : NONFLAMMABLE CEMENT
	RW : NONFLAMMABLE WIREWOUND
	※ : ADJUSTMENT RESISTOR
COIL	LF-8L : MICRO INDUCTOR
CAPACITOR	TA : TANTALUM
	PS : STYROL
	PP : POLYPROPYLENE
	PT : MYLAR
	MPS : METALIZED POLYESTER
	MPP : METALIZED POLYPROPYLENE
	ALB : BIPOLAR
	ALT : HIGH TEMPERATURE
	ALR : HIGH RIPPLE

Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et par une marque  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.



H1

CONTROL SW, AUDIO IN
Y-CHROMA IN, HEADPHONE IN

H2

SIRCS RECEIVE
INDICATOR

H3

[CONTROL SW]

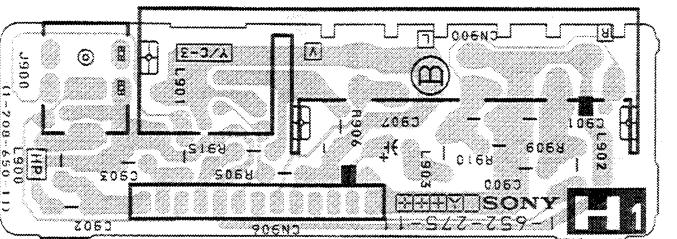
140

IN POWER SW] D PIN OUT
POWER SUPPLY

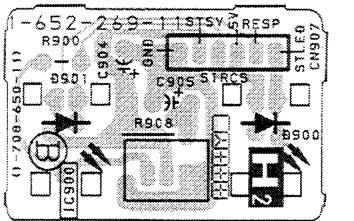
600 Vp-p. Can
inspection or r

- D BOARD -

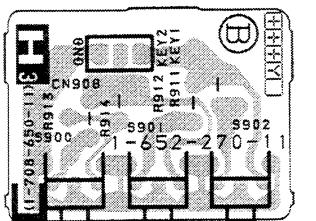
- H1 BOARD -



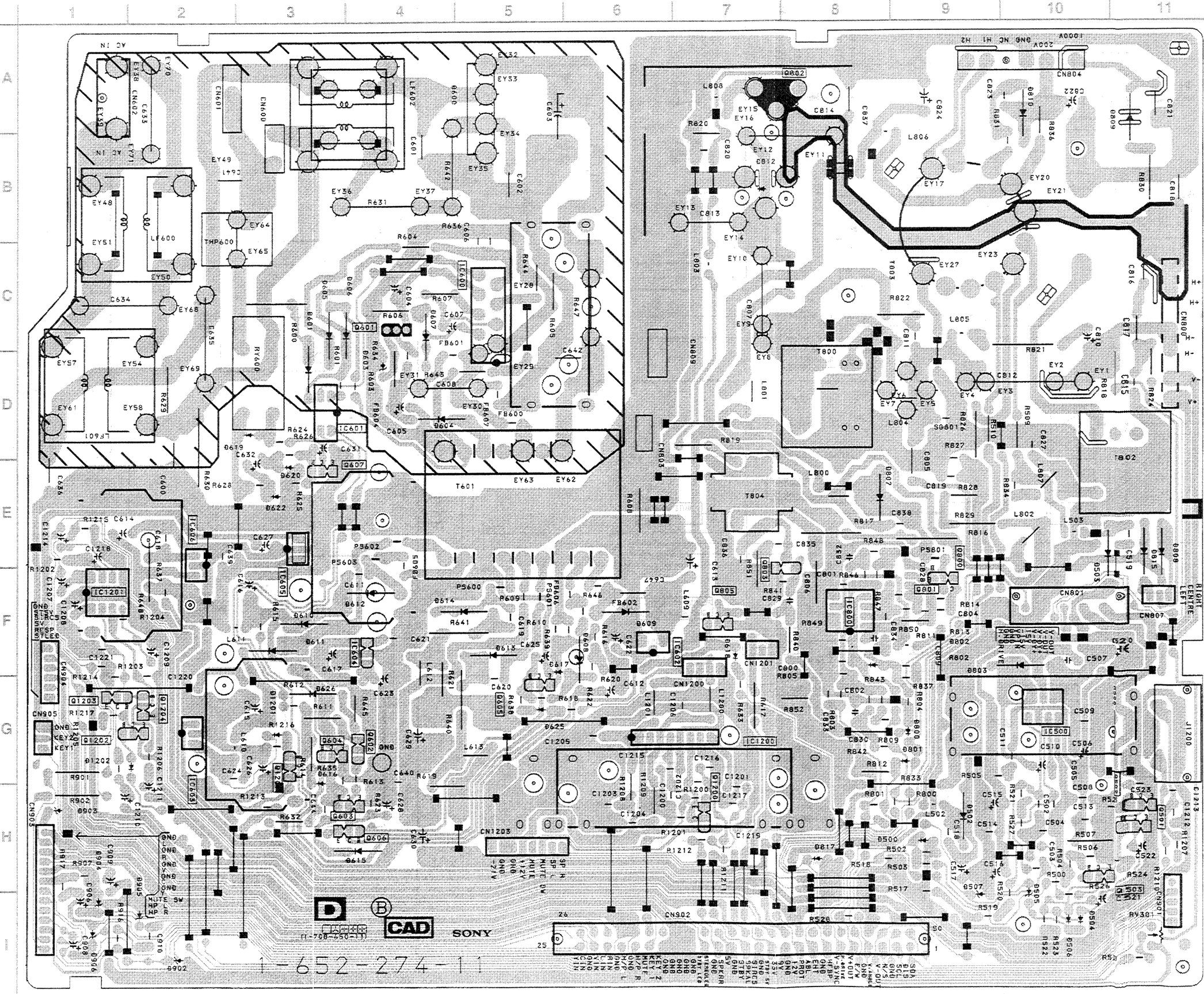
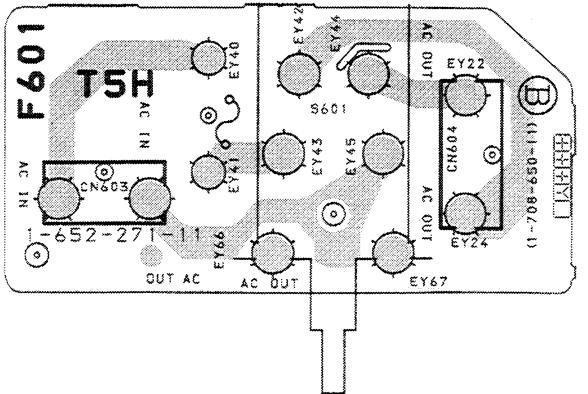
- H2 BOARD -



- H3 BOARD -



- F1 BOARD -

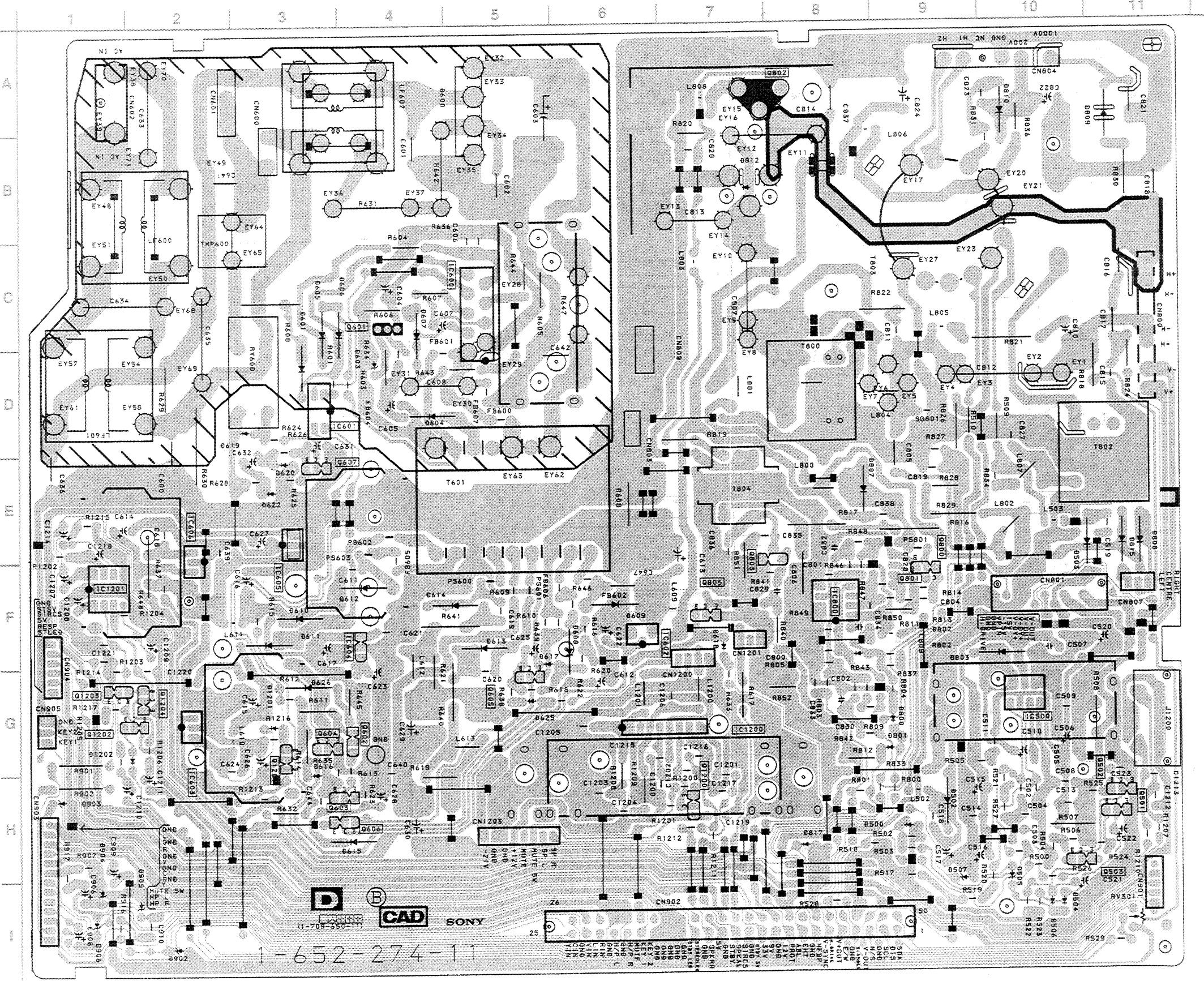


H2SIRCS RECEIVE
INDICATOR**H3**

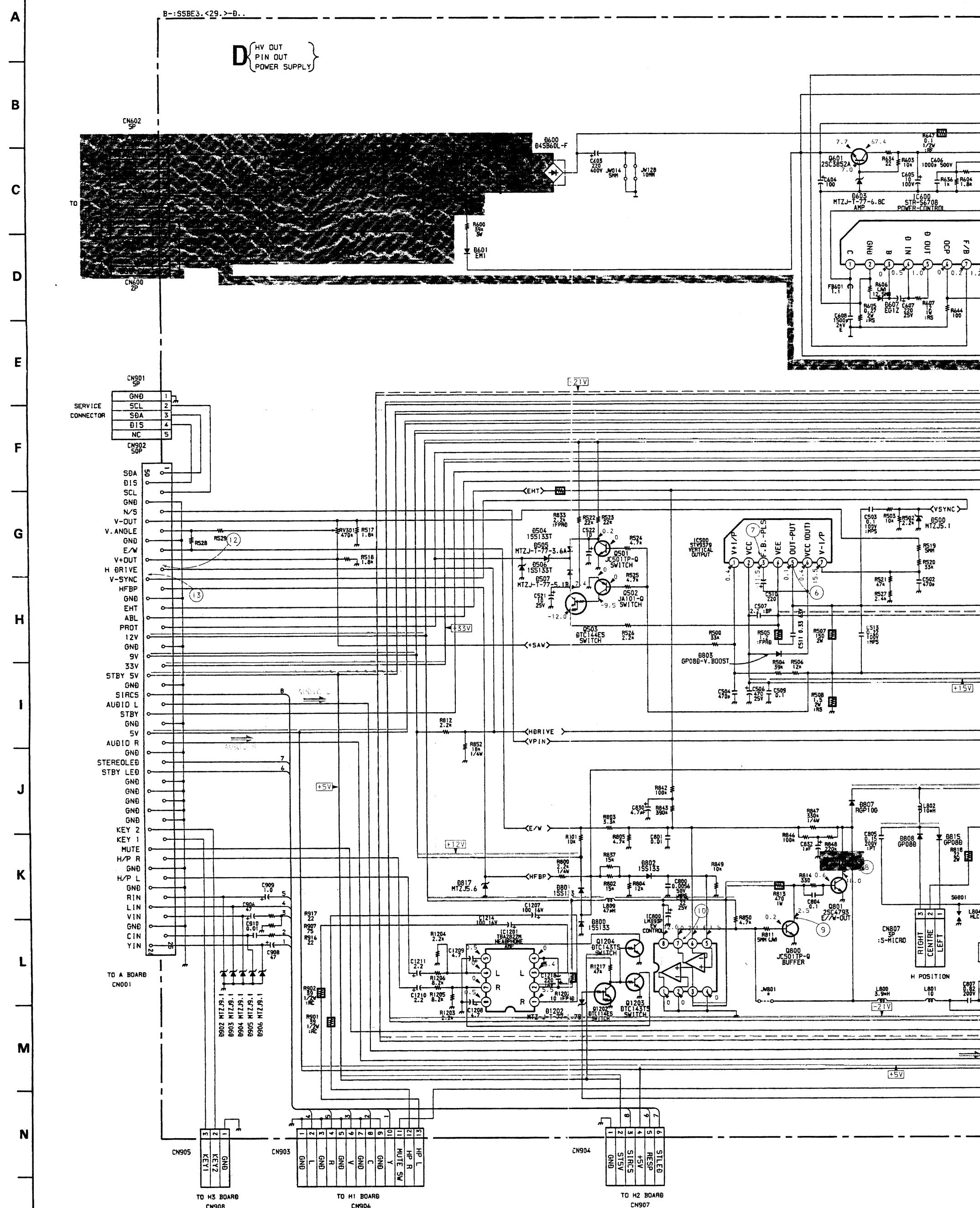
CONTROL SW

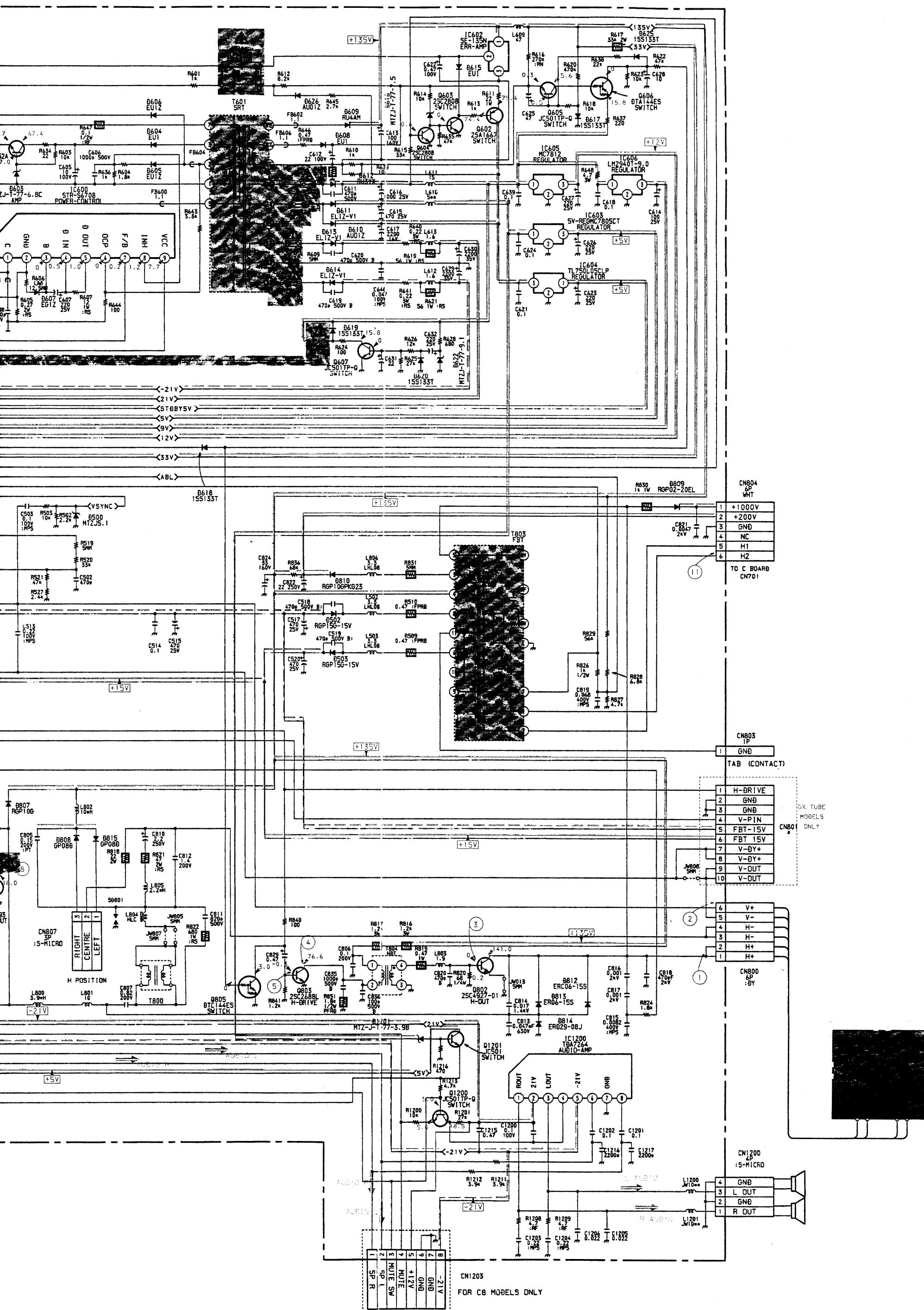
F1

AC IN POWER SW

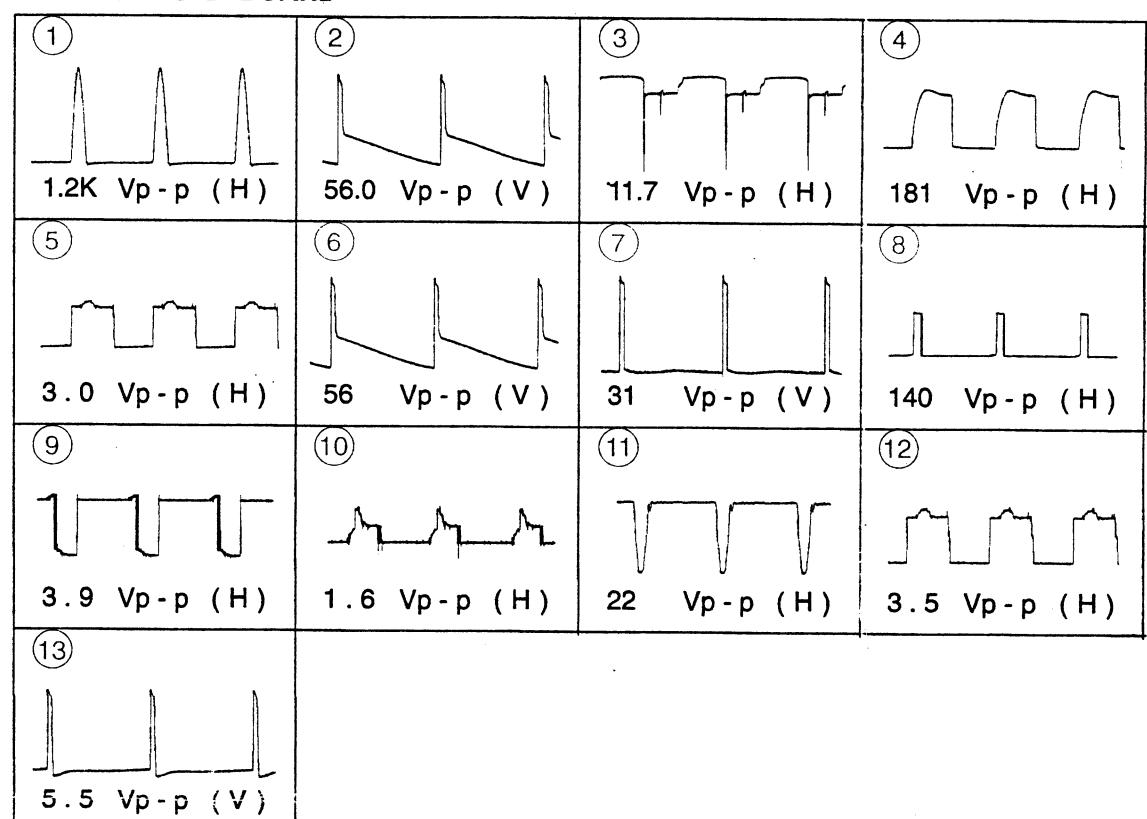
D HV OUT
PIN OUT
POWER SUPPLY600 Vp-p. Care must be paid to prevent an electric shock in
inspection or repairing.**- D BOARD -**

IC	D600	A - 4
IC500	D601	C - 3
IC600	D603	D - 4
IC601	D604	D - 4
IC602	D605	C - 3
IC603	D606	C - 4
IC604	D607	C - 4
IC605	D608	F - 6
IC606	D609	F - 6
IC800	D610	F - 3
IC1200	D611	F - 3
IC1201	D612	F - 4
	D613	F - 5
	D614	F - 4
	D615	H - 4
	D616	G - 3
	D617	F - 5
	D618	F - 7
	D619	D - 2
	D620	E - 3
	D622	E - 3
	D625	G - 5
	D626	G - 3
	D800	G - 9
	D801	G - 9
	D802	F - 9
	D803	F - 9
	D807	E - 9
	D808	E - 11
	D809	A - 11
	D810	A - 10
	D812	B - 7
	D815	E - 11
	D817	H - 8
	D902	I - 2
	D903	H - 1
	D904	H - 1
	D905	H - 2
	D906	I - 1
	D500	G - 9
	D502	G - 9
	D503	F - 10
	D504	I - 10
	D505	I - 10
	D506	I - 10
	D507	G - 9

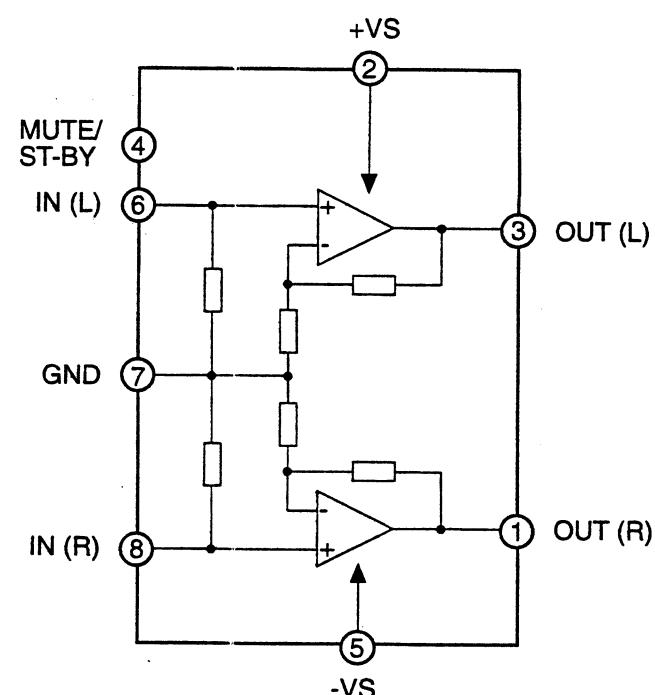




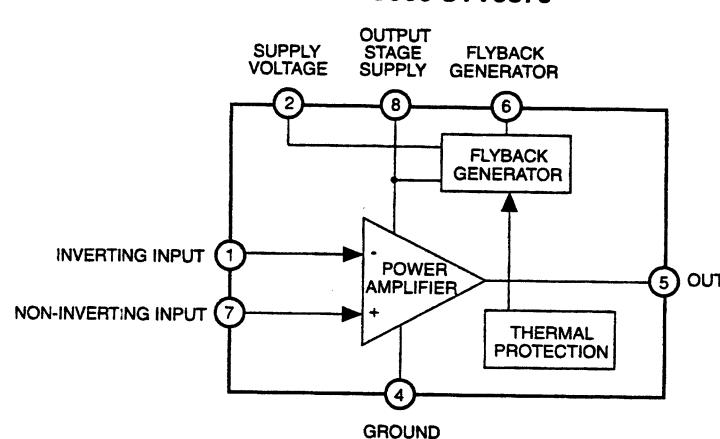
WAVEFORMS D BOARD



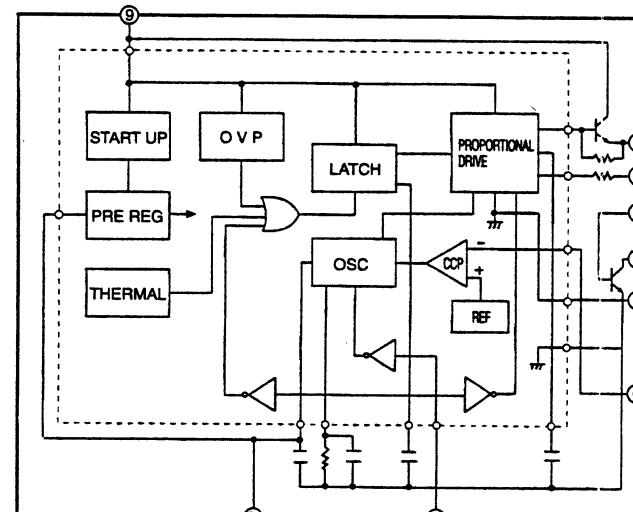
D BOARD IC1200 TDA7264



D BOARD IC500 STV9379



D BOARD IC600 STR-S6708

CN804
1P
WHT

1	+1000V
2	+200V
3	GND
4	NC
5	H1
6	H2

TO C BOARD
CN701CN803
1P

TAB (CONTACT)

IGX TUBE
MODELS
ONLY

CN801

8

1 H-DRIVE

2 GND

3 GND

4 V-PIN

5 FBT-15V

6 FBT 15V

7 V-DY+

8 V-DY+

9 V-OUT

10 V-OUT

CN800
10

1 H-

2 GND

3 H-

4 H-

5 H+

6 H+

7 V+

8 V-

9 H-

10 H+

CN800
10

1 H+

CN1200
10

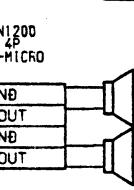
S-MICRO

4 GND

3 L DUT

2 GND

1 R DUT



A

B

C

D

E

F

G

H

1

J

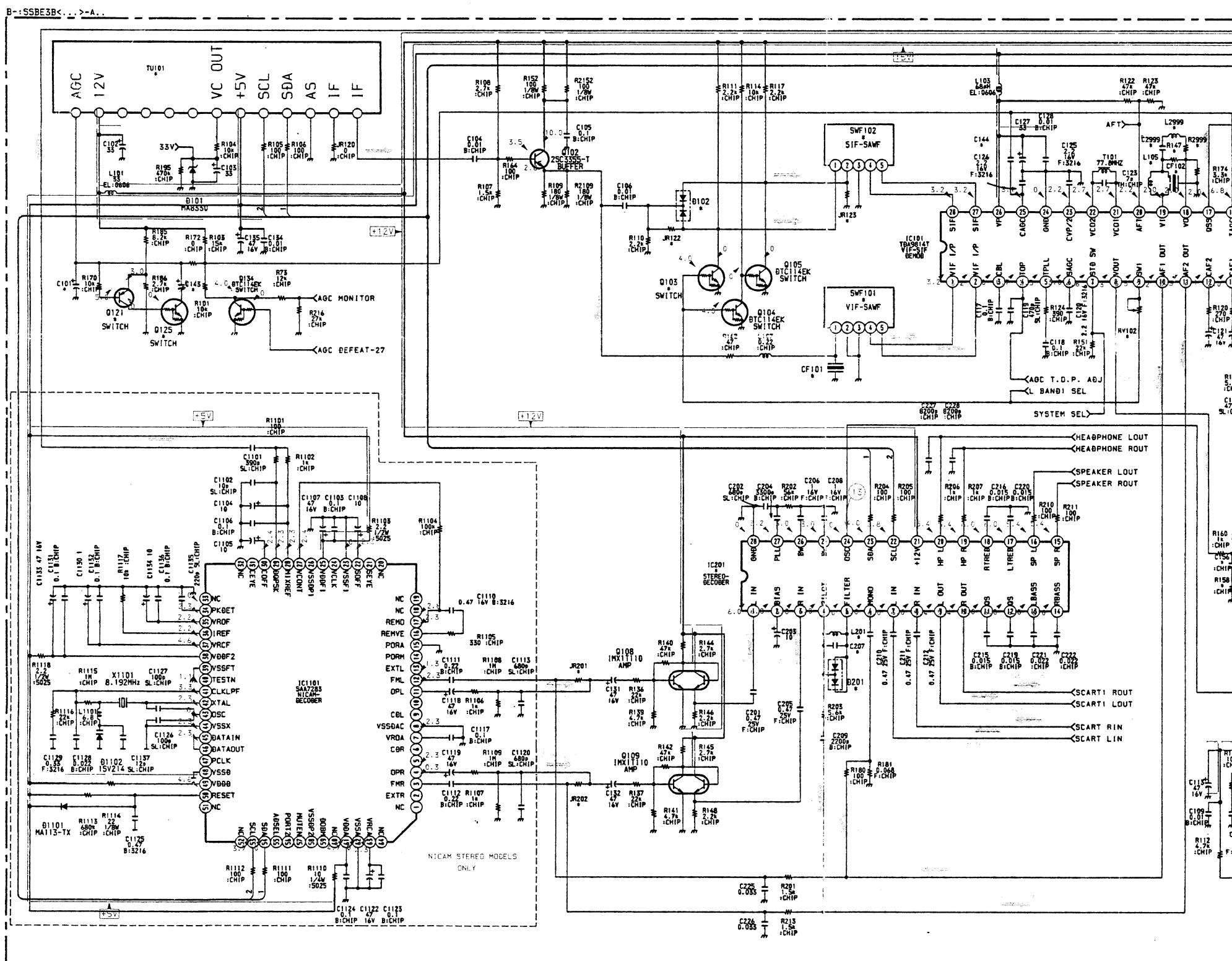
K

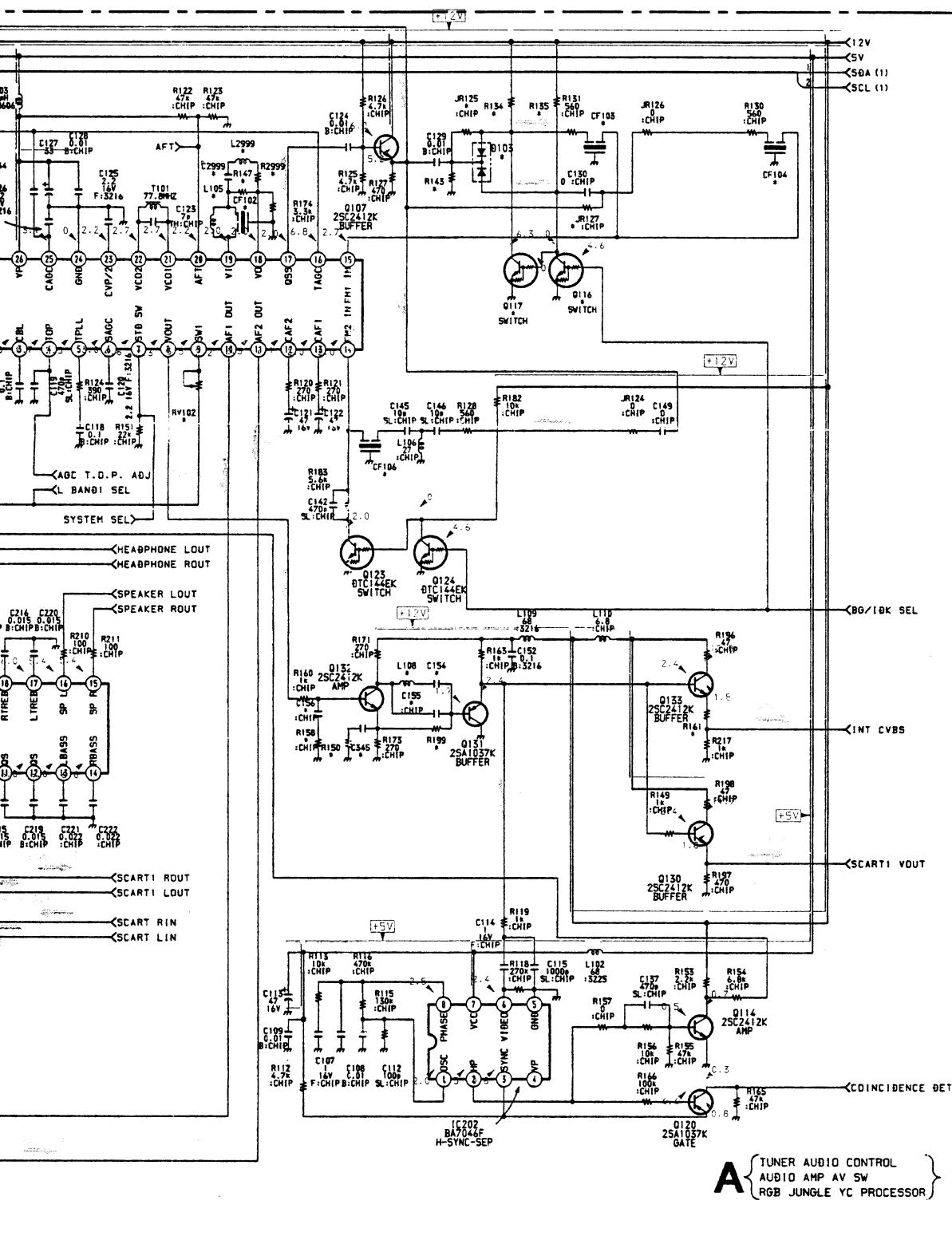
1

M

N

0

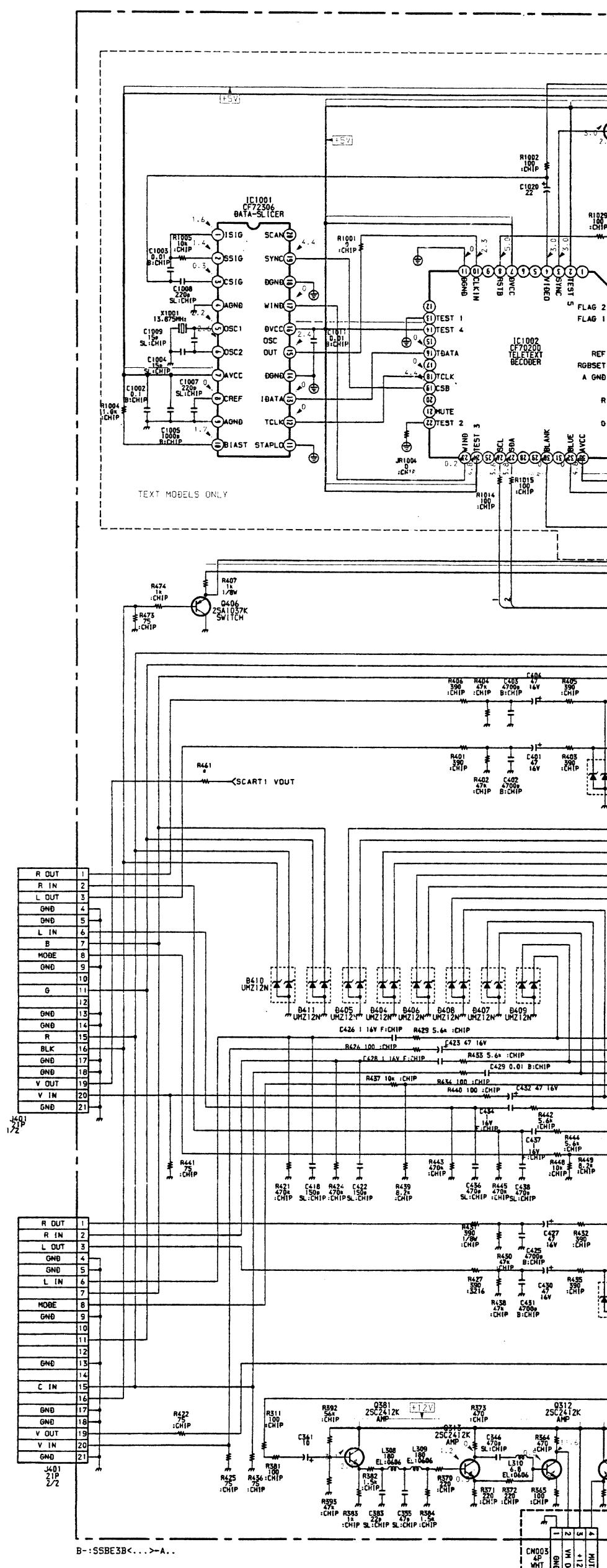


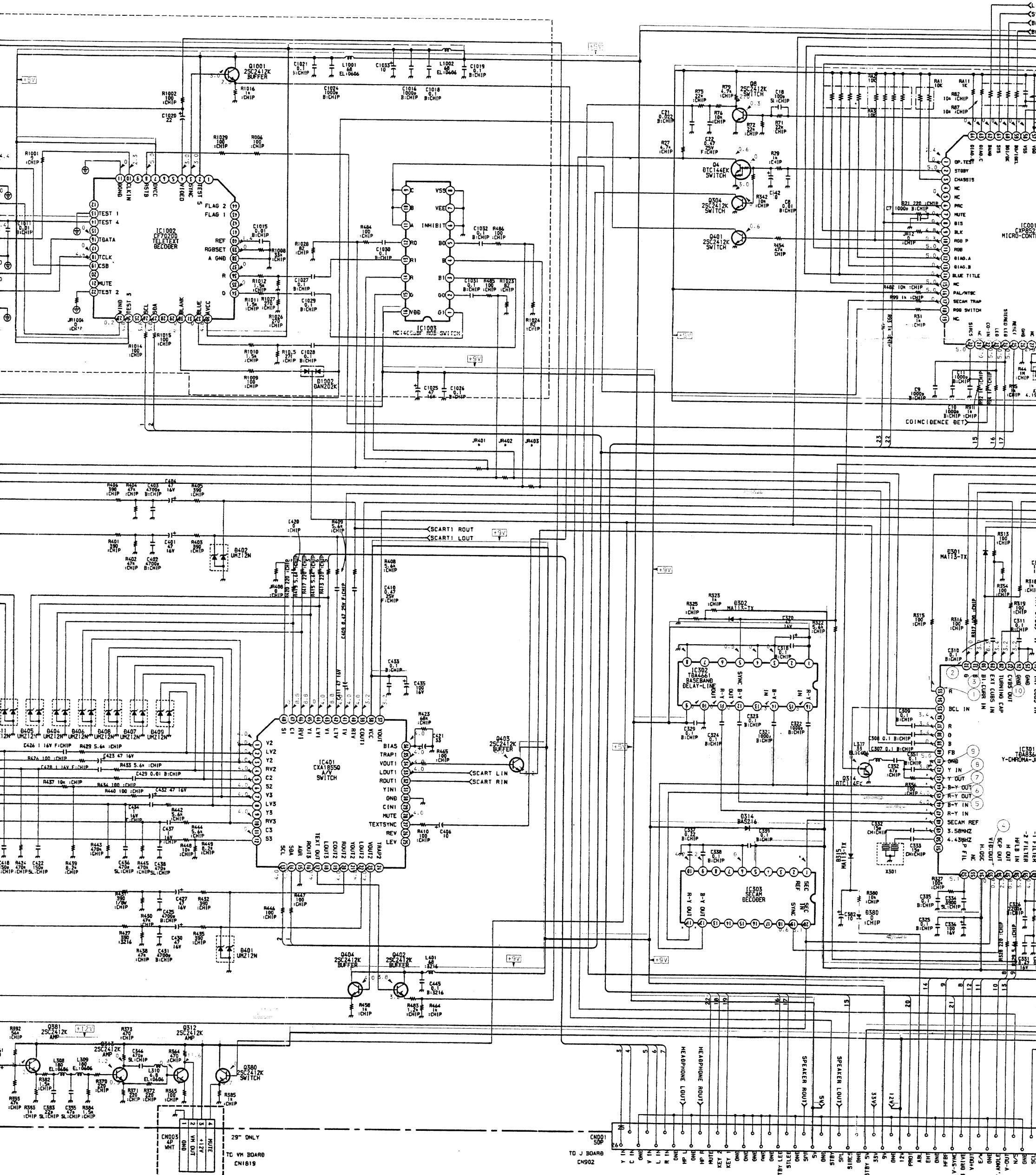


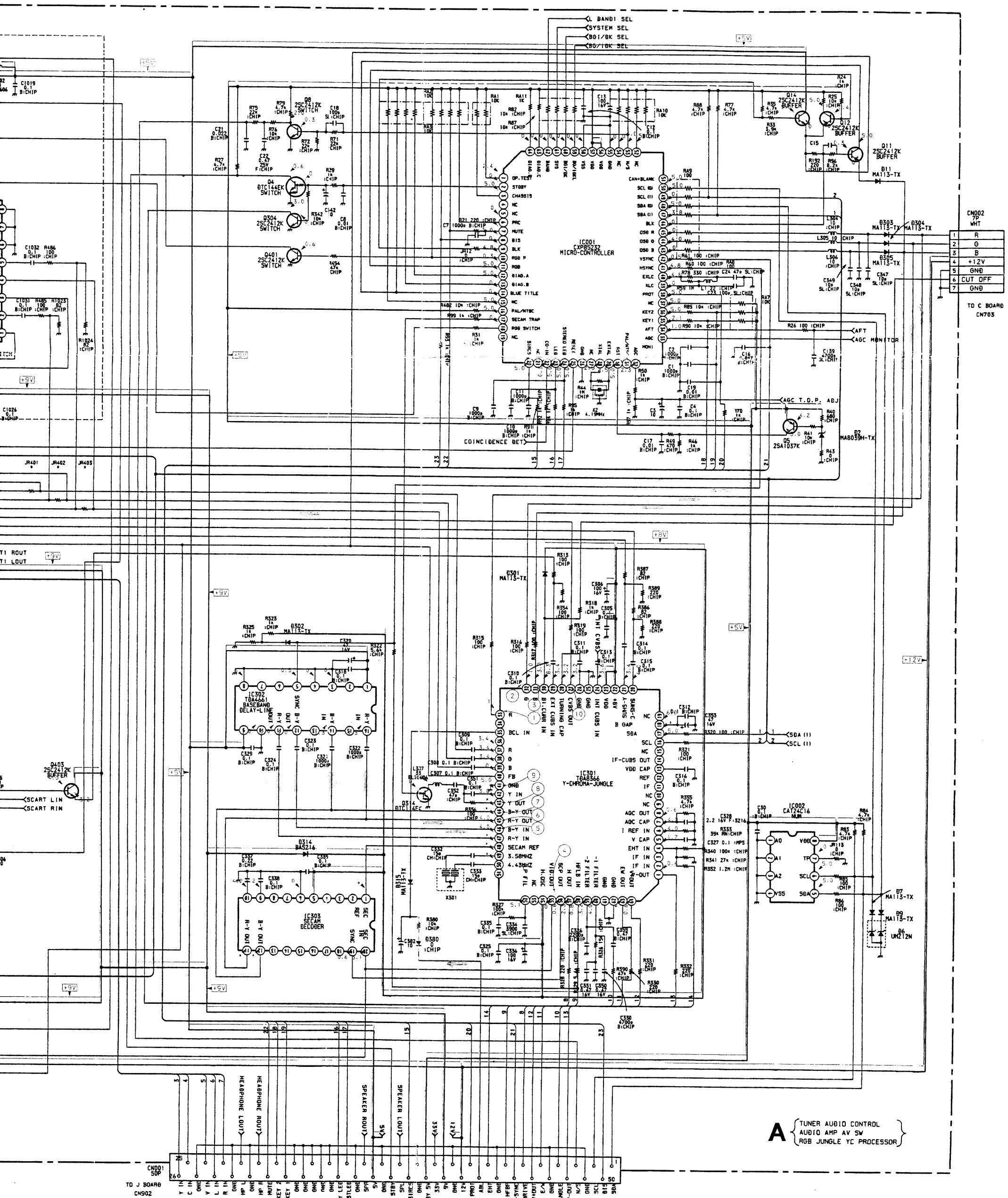
Voltages indicated with the mark on the schematic diagram are shown in the table below.

A BOARD

IC	Pin	PAL	SECAM	NTSC 3.58	NTSC 4.43
IC301	17	4.0	4.0	4.0	0
	35	3.6	2.5	3.5	3.5
	44	1.5	3.1	1.5	1.5
	45	1.5	3.0	1.5	1.5
	48	1.7	4.4	1.6	1.7
	49	1.4	1.4	2.0	1.4
	50	2.0	2.0	1.4	2.0
	63	3.4	2.5	2.2	2.5
IC303	1	1.7	4.4	1.6	1.7
	11	1.5	3.0	1.5	1.5
	12	1.5	3.1	1.5	1.5



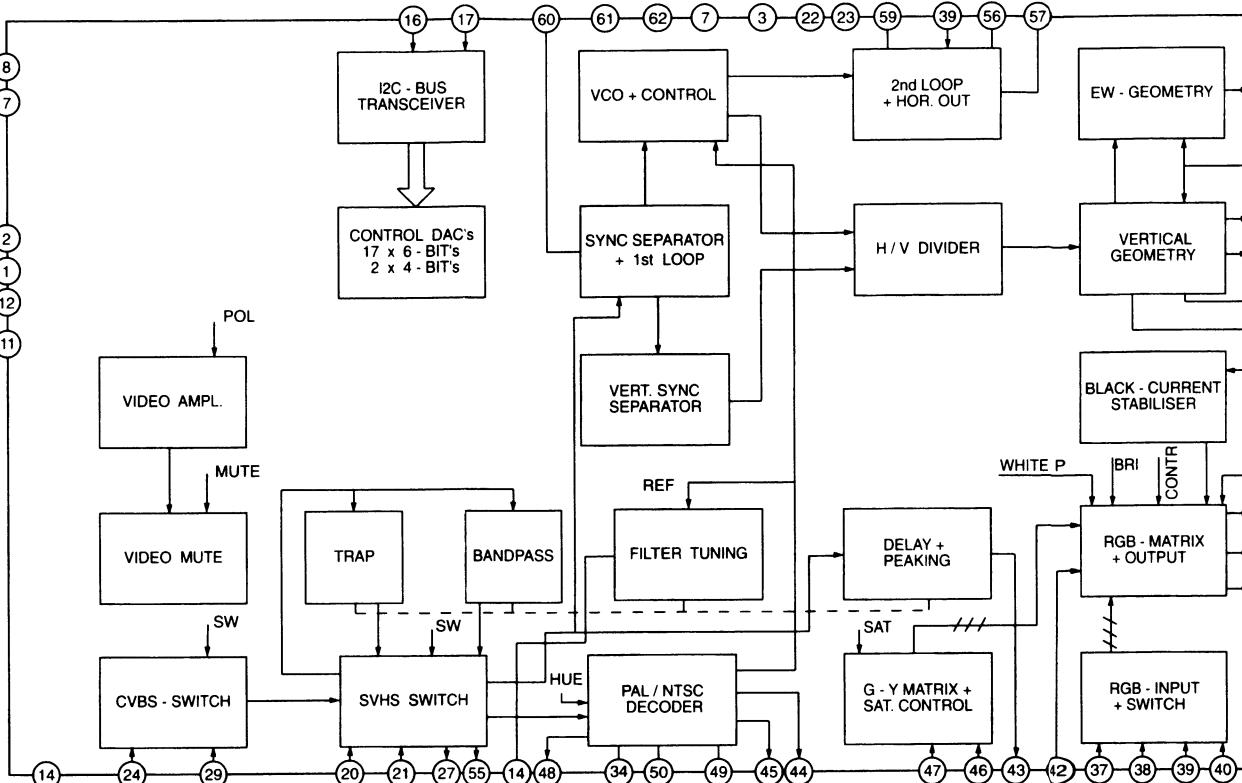




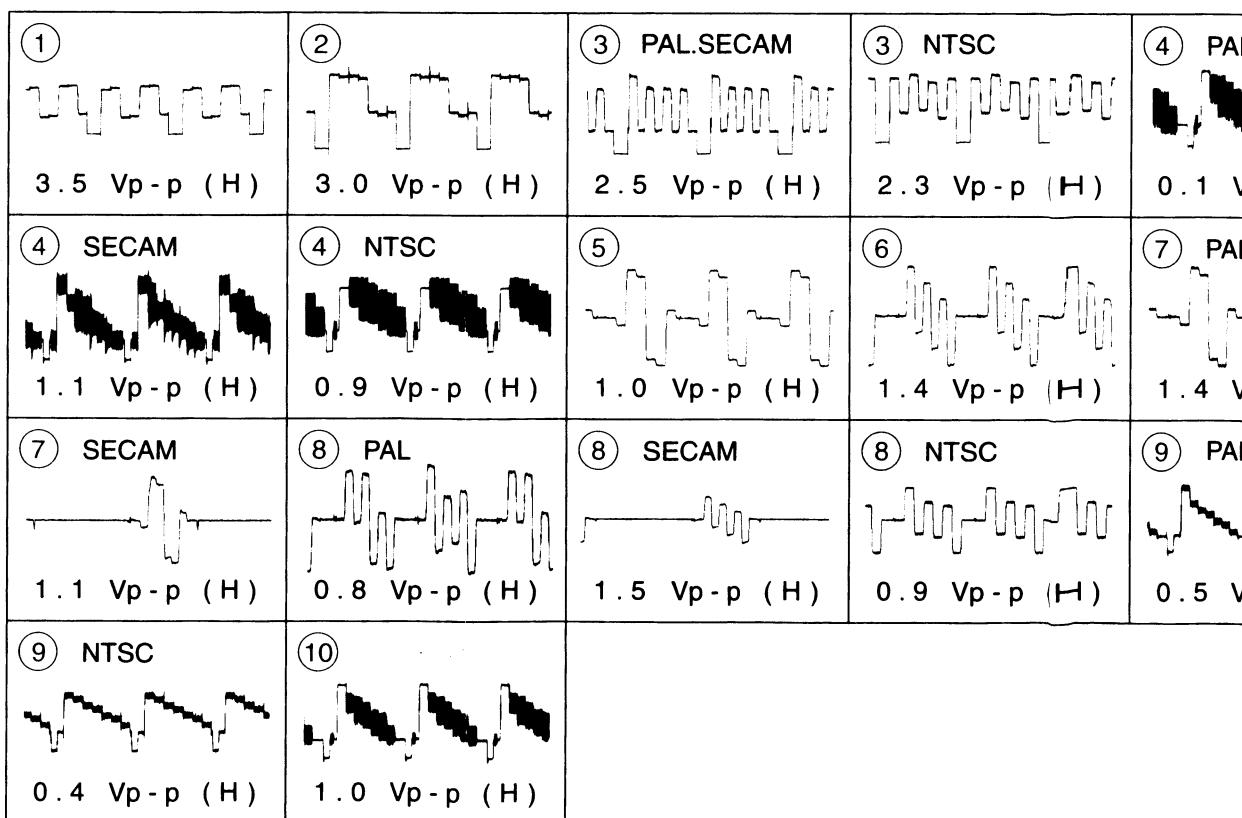
A BOARD * MARK

Ref	X2901D	X2901A	X2900B	X2901B	X2903E	X2902L	X2902U	X2901K
C101	22mF	22mF	4.7mF	4.7mF	22mF	22mF	22mF	22mF
C143	-	-	100mF 16V	100mF 16V	-	-	-	-
C144	-	-	1mF	1mF	-	-	-	-
C154	180pF	180pF	150pF	150pF	180pF	-	-	180pF
C155	47pF	47pF	33pF	33pF	47pF	-	-	47pF
C156	18pF	18pF	-	-	18pF	-	-	18pF
C207	0.0018mF 100V	-	-	0.0018mF 100V				
CF101	EFCV4045A4	EFCV4045A4	EFCV4045A4	EFCV4045A4	EFCV4045A4	-	-	EFCV4045A4
CF102	5.5mHz	5.5mHz	5.5mHz/6.6mHz	5.5mHz/6.6mHz	5.5mHz	6.0mHz	6.0mHz	5.5mHz
CF103	5.5mHz	5.5mHz	5.5mHz	5.5mHz	5.5mHz	-	-	5.5mHz
CF104	6.5mHz	-	6.0mHz	6.0mHz	-	SFE6.0MB	SFE6.0MB	6.5mHz
CF106	5.75mHz	5.75mHz	5.75mHz	5.75mHz	5.75mHz	-	-	5.75mHz
D102	-	-	DAN202K	DAN202K	-	-	-	-
D103	DAN202K	-	DAN202K	DAN202K	-	-	-	DAN202K
D201	DA204K	DA204K	DA204K	DA204K	DA204K	-	-	DA204K
IC201	TDA6612	TDA6612	TDA6612	TDA6612	TDA6612	TDA6622	TDA6622	TDA6612
IC303	TDA8395T	-	TDA8395T	TDA8395T	-	-	-	TDA8395T
JR122	0 :CHIP	0 :CHIP	-	-	0 :CHIP	0 :CHIP	0 :CHIP	0 :CHIP
JR123	0 :CHIP	0 :CHIP	-	-	0 :CHIP	0 :CHIP	0 :CHIP	0 :CHIP
JR125	-	0 :CHIP	-	-	0 :CHIP	-	-	-
JR127	-	-	-	-	-	0 :CHIP	-	-
JR201	0 :CHIP	0 :CHIP	0 :CHIP	0 :CHIP	-	-	-	0 :CHIP
JR202	0 :CHIP	0 :CHIP	0 :CHIP	0 :CHIP	-	-	-	0 :CHIP
JR401	-	-	0 :CHIP	-	-	-	-	-
JR402	-	-	0 :CHIP	-	-	-	-	-
JR403	-	-	0 :CHIP	-	-	-	-	-
L105	15μH	15μH	8.2μH	8.2μH	15μH	15μH	15μH	15μH
L108	15μH	15μH	27μH	27μH	15μH	-	-	15μH
L201	4.7mmH	4.7mmH	4.7mmH	4.7mmH	4.7mmH	-	-	4.7mmH
Q103	-	-	DTC114EK	DTC114EK	-	-	-	-
Q116	DTC144EK	-	DTC144EK	DTC144EK	-	-	-	DTC144EK
Q117	DTC144EK	-	DTC144EK	DTC144EK	-	-	-	DTC144EK
Q121	-	-	2SA1037K	2SA1037K	-	-	-	-
Q125	-	-	DTC114EK	DTC114EK	-	-	-	-
R134	2.2K	-	2.2K	2.2K	-	-	-	2.2K
R135	2.2K	-	2.2K	2.2K	-	-	-	2.2K
R143	2.2K	-	2.2K	2.2K	-	-	-	2.2K
R147	270	270	150	150	270	270	270	270
R158	12K	12K	-	-	12K	-	-	12K
R199	330	330	470	470	330	-	-	330
RV102	-	-	22K	22K	-	-	-	-
SWF101	K3953M	K3953M	K3953M	K3953M	K3953M	J3950M	J3950M	K3953M
SWF102	K9350M	K9350M	K9453M	K9453M	K9350M	K9350M	K9350M	K9350M
TU101	UV-916H	UV-916H	UV-916H	UV-916H	UV-916H	U-944C	U-944C	UV-916H

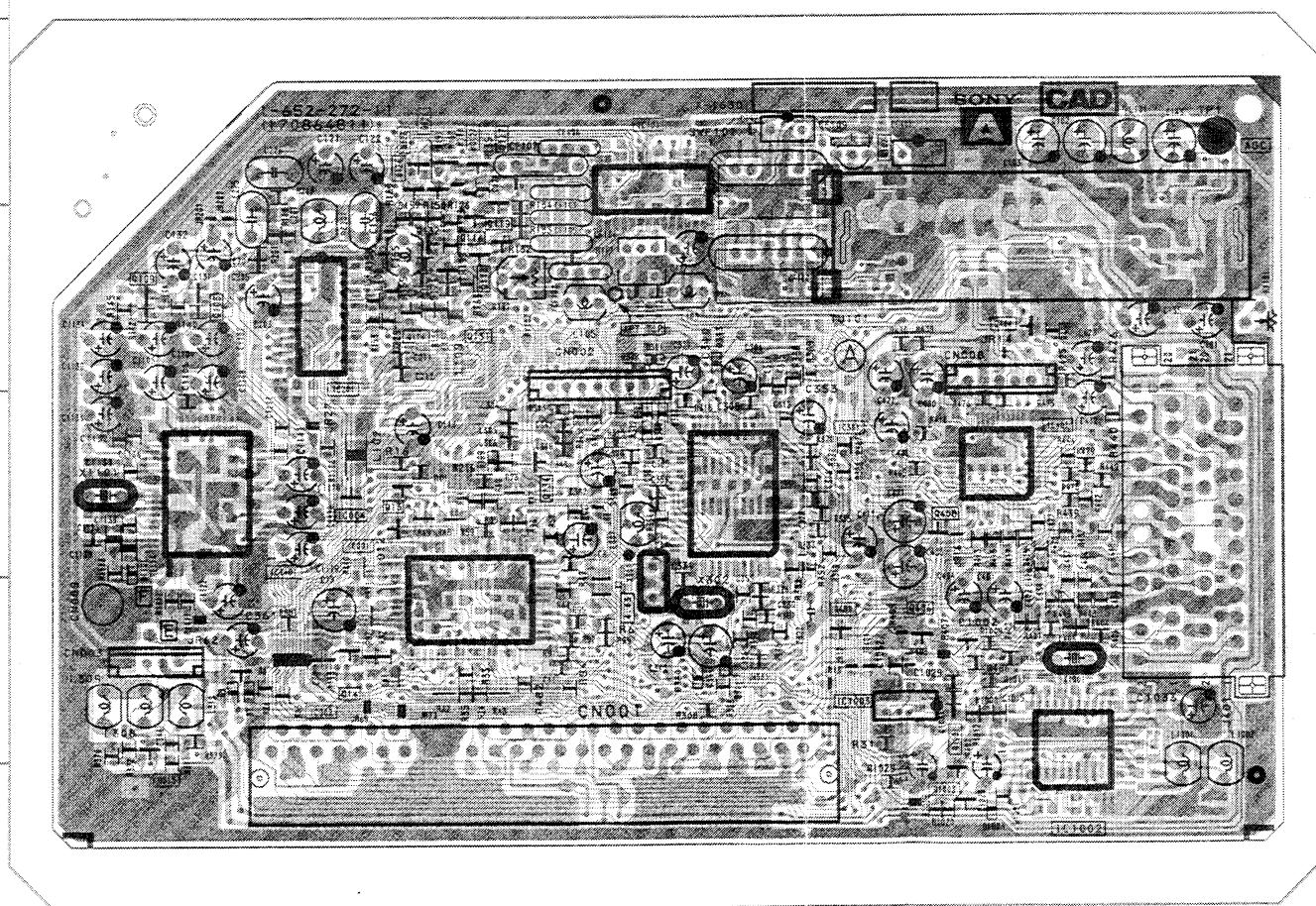
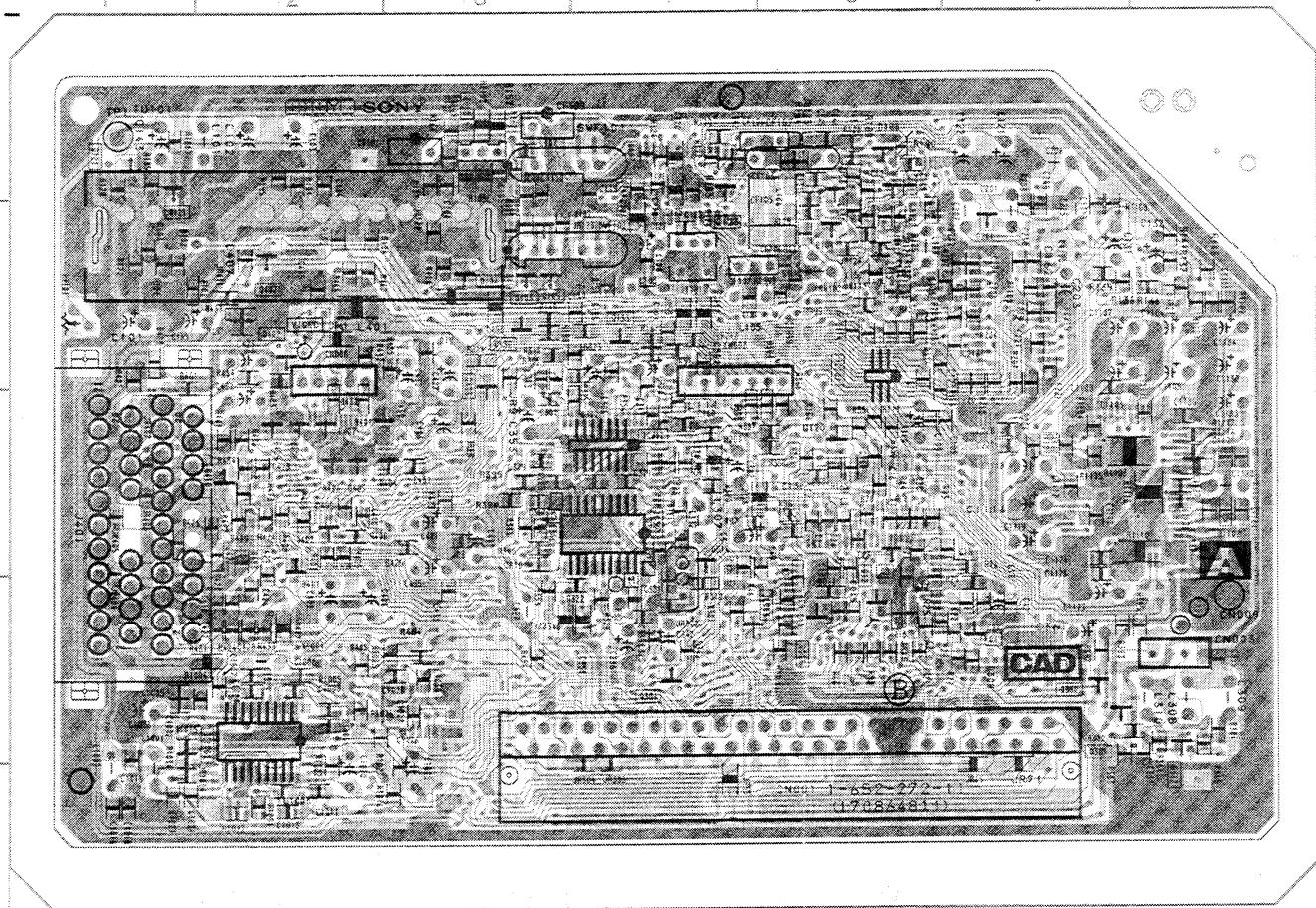
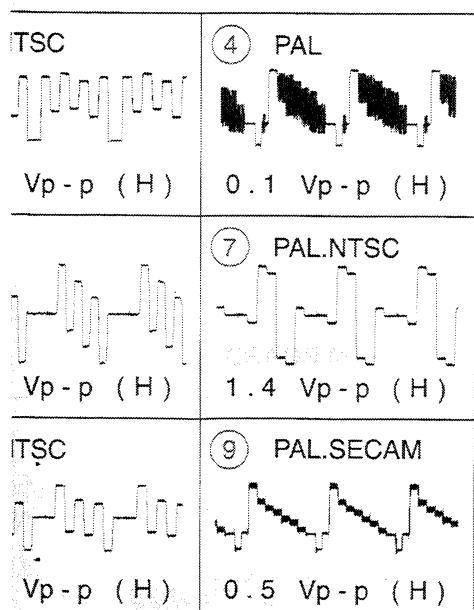
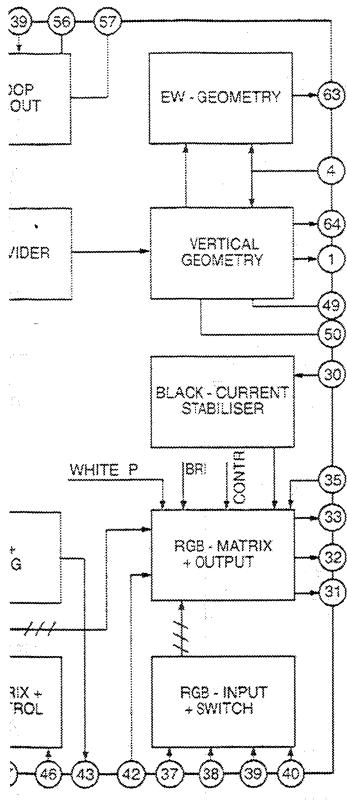
A BOARD IC301 TDA8366T



WAVEFORMS A BOARD



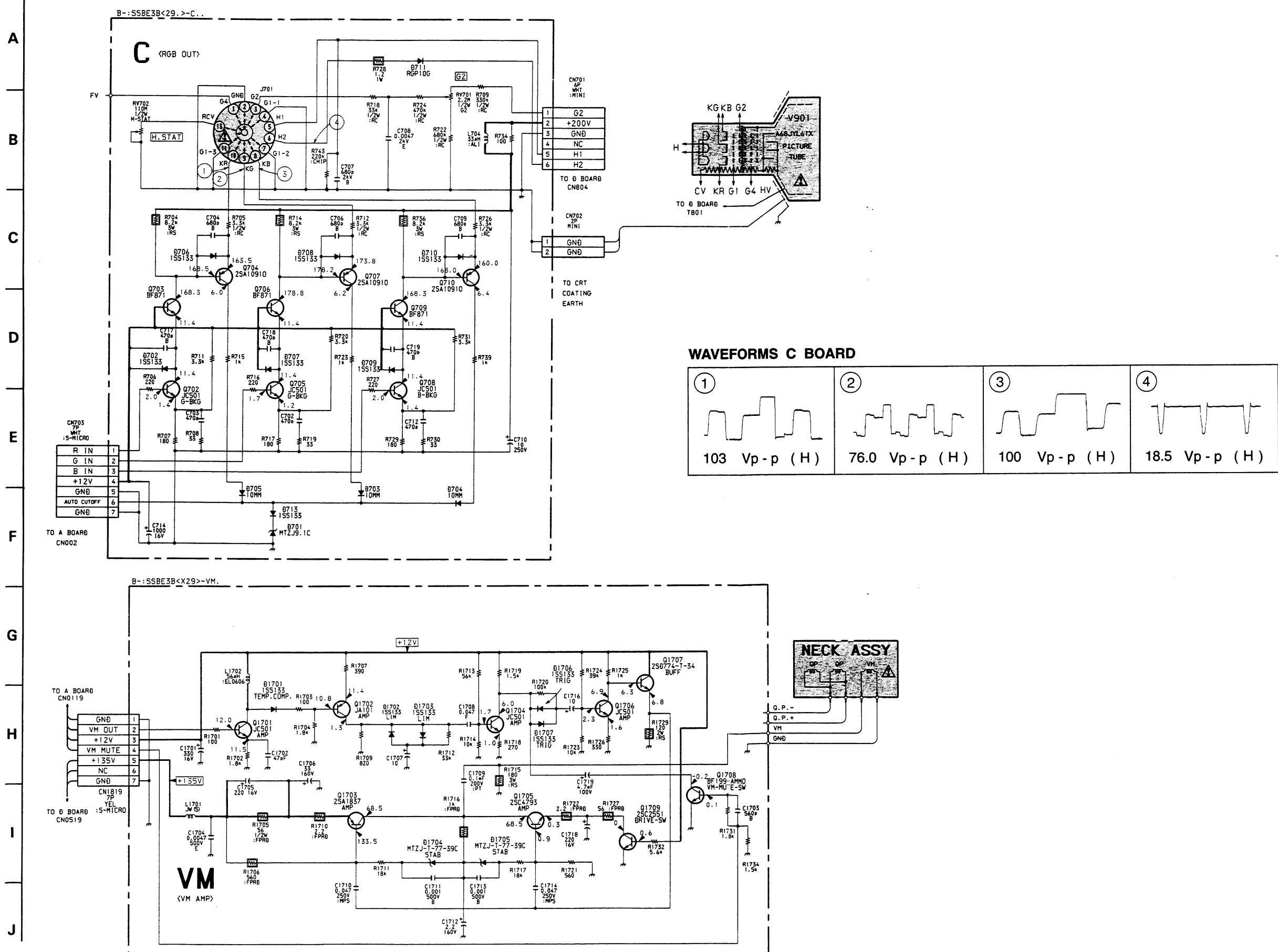
- A BOARD -



IC	
Q313	J - 1
Q314	C - 4
Q380	D - 6
Q381	D - 6
Q401	I - 5
Q402	B - 2
Q403	B - 3
Q404	G - 6
Q1001	I - 6
Q1003	J - 5
DIODE	
D6	I - 2
D7	I - 2
D9	I - 2
D11	D - 5
D101	B - 2
D102	B - 4
D103	A - 5
D201	B - 6
D301	G - 4
D302	C - 4
D303	H - 3
D304	B - 5
D305	C - 4
D314	B - 3
D380	I - 4
D401	C - 2
D402	C - 2
D404	C - 2
D405	C - 2
D406	C - 2
D407	C - 2
D408	C - 2
D409	C - 2
D410	C - 2
D411	D - 2
D1002	I - 6
D1003	J - 6
D1101	H - 1
D1102	C - 7
Q312	E - 7

Note :

- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

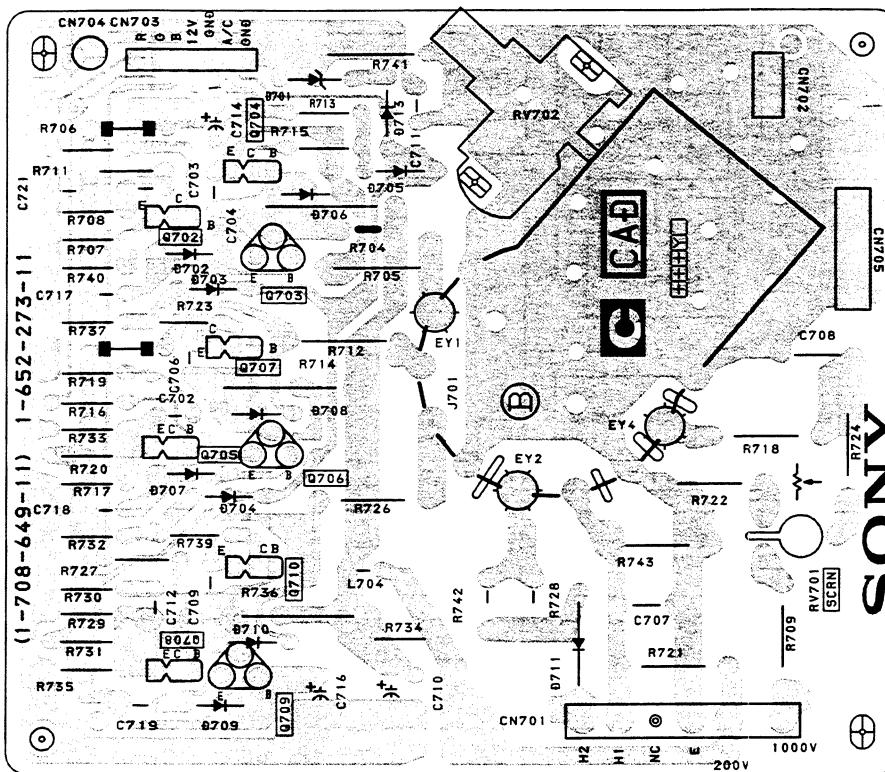
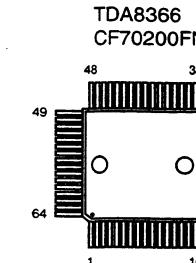
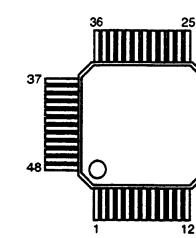
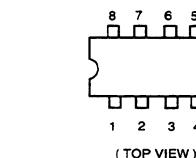


C

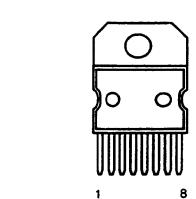
[RGB OUT]

VM

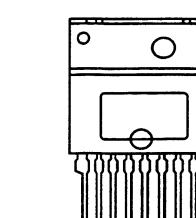
[VM AMP]

- C BOARD -**5.4 SEMICONDUCTORS**CXA1855Q
SAA7283
CXP85232LM393
TDA7264

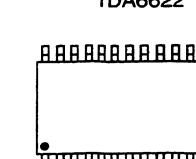
TDA7264



TDA6622



MC14053BF



1MX1T110

BF871

2SC4927-01

UMZ12N

RGP10GPKG23

RGP15GPKG23

GP08DPKG23

RU-4AM

EL1Z

EU-1-V1

EU-1ZV1

SLR-54VR3

MTZJ-9.1C

MTZJ-5.1B

MTZJ-9.1

MTZJ-3.6A

MTZJ-6.8C

MTZJ-39C

1SS133

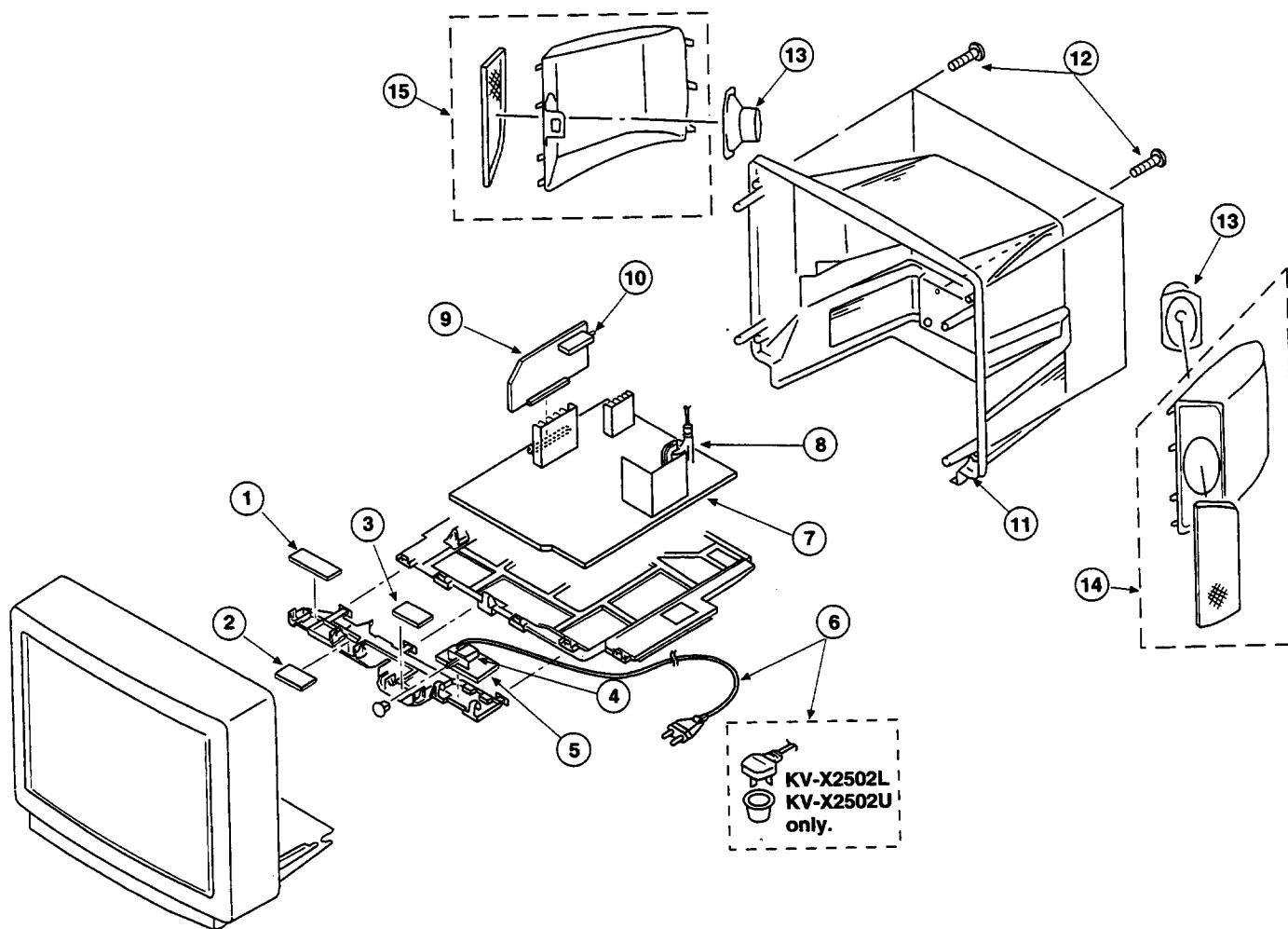
CATHODE

ANODE

CATHODE

ANODE

6-1. CHASSIS



6-2. PICTURE TUBE

